

2022-1200 and 2022-2223

**United States Court of Appeals
for the Federal Circuit**

AMERANTH, INC.,

Plaintiff-Appellant,

— v. —

DOMINO'S PIZZA, LLC, DOMINO'S PIZZA, INC.,

Defendants-Appellees.

*On Appeal from the United States District Court for the Southern
District of California in No. 3:12-cv-00733-DMS-WVG,
Honorable Dana M. Sabraw, Judge*

**NON-CONFIDENTIAL BRIEF FOR PLAINTIFF-
APPELLANT**

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FEDERAL CIRCUIT RULE 28(a)(12)(B) STATEMENT

U.S. Patent No. 8,146,077

1. An information management and real time synchronous communication system for configuring and transmitting hospitality menus comprising:

- a. a central processing unit,
- b. a data storage device connected to said central processing unit,
- c. an operating system including a first graphical user interface,
- d. a master menu including at least menu categories, menu items and modifiers, wherein said master menu is capable of being stored on said data storage device pursuant to a master menu file structure and said master menu is capable of being configured for display to facilitate user operations in at least one window of said first graphical user interface as cascaded sets of linked geographical user interface screens, and
- e. menu configuration software enabled to generate a programmed handheld menu configuration from said master menu for wireless transmission to and programmed for display on a wireless handheld computing device, said programmed handheld menu configuration comprising at least menu categories, menu items and modifiers and wherein the menu configuration software is enabled to generate said programmed handheld menu configuration by utilizing parameters from the master menu file structure defining at least the menu categories, menu items and modifiers of the master menu such that at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration are synchronized in real time with analogous information comprising the master menu,

wherein the menu configuration software is further enabled to generate the programmed handheld menu configuration in conformity with a customized display layout unique to the wireless handheld computing device to facilitate user operations with and display of the programmed handheld menu configuration on the display screen of a handheld graphical user interface integral with the wireless handheld computing device, wherein said customized display layout is compatible with the displayable size of the handheld graphical user interface wherein the programmed handheld menu configuration is configured by the menu configuration software for display as programmed cascaded sets of linked graphical user interface screens appropriate for the customized display layout of the wireless handheld computing device, wherein said programmed cascaded sets of linked graphical user interface screens for display of the handheld menu configuration are configured differently from the cascaded sets of linked graphical user interface screens for display of the master menu on said first

graphical user interface, and

wherein the system is enabled for real time synchronous communications to and from the wireless handheld computing device utilizing the programmed handheld menu configuration including the capability of real time synchronous transmission of the programmed handheld menu configuration to the wireless handheld computing device and real time synchronous transmissions of selections made from the handheld menu configuration on the wireless handheld computing device, and wherein the system is further enabled to automatically format the programmed handheld menu configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and

wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system.

6. The information management and real time synchronous communications system in accordance with claim 1 in which the wireless handheld computing device is a smart phone.

7. The information management and real time synchronous communications system in accordance with claim 1, further enabled to facilitate and complete payment processing directly from the wireless handheld computing device including: a) Billing; b) Status and c) Payment Information.

8. The information management and real time synchronous communications system in accordance with claim 1, wherein one or more of the layout, views or fonts of the programmed handheld menu configuration are created in conformity with the display screen parameters of the wireless handheld computing device and wherein the system is enabled to generate a view of the programmed handheld menu configuration for user preview from the central computing unit and which facilitates a further user manual modification prior to the transmissions of the programmed handheld menu configuration to the wireless handheld computing device.

9. An information management and real time synchronous communications system for configuring and transmitting hospitality menus comprising:

- a) a central processing unit;
- b) a data storage device connected to said central processing unit;

c) an operating system including a first graphical user interface, said operating system configured to interoperate with the central processing unit, the data storage device and application software;

d) a master menu including menu categories and menu items, wherein said master menu is capable of being stored on said data storage device pursuant to a master menu file structure and said master menu is capable of being configured for display to facilitate user operations in at least one window of said first graphical user interface as cascaded sets of linked graphical user interface screens; and

e) a modifier menu capable of being stored on said data storage device, and menu configuration software enabled to automatically generate a programmed handheld menu configuration from said master menu for display on a wireless handheld computing device, said programmed handheld menu configuration comprising at least menu categories, menu items and modifiers and wherein the menu configuration software is enabled to generate said programmed handheld menu configuration by utilizing parameters from the master menu file structure defining at least the categories and items of the master menu and modifiers from the modifier menu at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration are synchronized in real time with analogous information comprising the master and modifier menus wherein the menu configuration software is further enabled to generate the programmed handheld menu configuration in conformity with a customized display layout unique to the wireless handheld computing device to facilitate user operations with and display of the programmed handheld menu configuration on the display screen of a handheld graphical user interface integral with the wireless handheld computing device, wherein said customized display layout is compatible with the displayable size of the handheld graphical user interface, wherein the programmed handheld menu configuration is configured by the menu configuration software for display as cascaded sets of linked graphical user interface screens appropriate for the customized display layout of the wireless handheld computing device, wherein said cascaded sets of linked graphical user interface screens for display of the programmed handheld menu configuration are configured differently from the cascaded sets of related graphical user interface screens for display of the master menu on said first graphical user interface, and wherein the system is enabled for real time synchronous communications to and from the wireless handheld computing device utilizing the programmed handheld menu configuration including the capability of real time synchronous transmission of at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration to the wireless handheld computing device and real time synchronous transmissions of selections made from the handheld menu configuration on the wireless handheld computing device, and

wherein the system is further enabled to automatically format the programmed handheld menu configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and

wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least: one other wireless handheld computing device in the system.

11. The information management and real time synchronous communications system in accordance with claim 9, wherein at least two different hospitality software applications are integrated between and with one another.

13. An information management and real time synchronous communications system for use with wireless handheld computing devices and the internet comprising:

- a) a master database connected in said system and configured to store hospitality application information pursuant to a master database file structure;
- b) at least one wireless handheld computing device connected in said system and configured to display said hospitality application information;
- c) at least one web server connected in said system;
- d) at least one web page connected in said system and configured to display said hospitality application information; and
- e) real time communications control software enabled to link and synchronize hospitality application information simultaneously between the master database, wireless handheld computing device, web server and web page, wherein the communications control software is enabled to utilize parameters from the master data base file structure to synchronize the hospitality application information in real time between the master database, at least one wireless handheld computing device, at least one web server, and at least one web page such that substantially the same information comprising the hospitality application information is capable of being displayed on the wireless handheld computing device, at least one web page and other display screens of the synchronized system, such that the hospitality application information is synchronized between any connected users,

wherein the communications control software is enabled to act as a real time interface between the elements of the system and any applicable communications protocol,

wherein the communications control software is enabled to automatically and simultaneously configure the hospitality application information for display on both the wireless handheld computing device and the web page in conformity with a customized display layout unique to the wireless handheld computing device or the web page, wherein said customized display layout is compatible with the displayable size of the handheld computing device display screen or the web page, and

wherein the communications control software is further enabled to automatically format a programmed handheld configuration for display as cascaded sets of linked graphical user interface screens is appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system, and

wherein the system is enabled for real time synchronous transmission of the configured hospitality application information to the wireless handheld computing device, the web server and the web page and real time synchronous transmissions of inputs responding to the configured hospitality application information from the wireless handheld computing device, or the web server or the web page.

14. The information management and real time synchronous communications system in accordance with claim 13, further including a communications systemic relationship comprising: a) A Wireless Hub Application; b) A Web Hub Application; c) Linked Databases Between two or more different Hospitality Applications; and d) A Communications, Setup Application.

15. The information management and real time synchronous communications system of claim 13, wherein the system is enabled to automatically import the information from the POS (point of sale) database into the system.

16. The information management and real time synchronous communications system of claim 13, wherein at least two different hospitality applications are integrated between and with one another.

17. The information management and real time synchronous communications system in accordance with claim 13, wherein the hospitality application information also includes : the completion of payment processing.

18. The information management and real time synchronous communications system in accordance claim 13, wherein the configured wireless handheld computing device is a smart phone.

CERTIFICATE OF INTEREST

Counsel for Appellant, Ameranth Inc., certifies the following:

1. The full name of every party or amicus represented by me is:

Ameranth, Inc.

2. The name of the real party in interest (Please only include any real party in interest NOT identified in Question 3. below) represented by me:

None.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None.

4. The names of all law firms and the partners or associates that appeared the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

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Ganzfried Law: Jerrold J. Ganzfried

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Gratzinger

Watts Law Offices: Ethan Mahoney Watts

5. The title and number of any case known to counsel to be pending in this or any other court or agency that will directly affect or be directly affected by this court's decision in the pending appeal. See Fed. Cir.

R. 47. 4(a)(5) and 47.5(b).

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AMERANTH, INC. *Plaintiff – Appellant*, v. PAPA JOHN'S USA, INC., OPENTABLE, INC., SEAMLESS NORTH AMERICA, LLC, GRUBHUB, INC., AGILYSYS, INC., HYATT CORPORATION, STARWOOD HOTELS & RESORTS WORLDWIDE INC., BEST WESTERN INTERNATIONAL, INC., MARRIOTT INTERNATIONAL, INC., THE RITZ-CARLTON HOTEL COMPANY, L.L.C., MARRIOTT HOTEL

SERVICES, INC., RENAISSANCE HOTEL OPERATING COMPANY, HOTEL TONIGHT, INC., HOTELS.COM, L.P., HILTON RESORTS CORPORATION, HILTON WORLDWIDE, INC., HILTON INTERNATIONAL CO., KAYAK SOFTWARE CORPORATION, MOBO SYSTEMS, INC., ORBITZ, LLC, STUBHUB, INC., TICKETMASTER, LLC, LIVE NATION ENTERTAINMENT, INC., TRAVELOCITY.COM LP, USABLENET, INC., FANDANGO, INC., HOTWIRE, INC., EXPEDIA, INC., ORACLE CORPORATION, ATX INNOVATION, INC., dba Tabbedout, APPLE INC., EVENTBRITE, INC., TICKETBISCUIT, LLC, TICKETFLY, INC., STARBUCKS CORPORATION, *Defendants – Appellees.*

(Appeals from the United States District Court for the Southern District of California in Nos. 3:12-cv-00729-DMS-WVG, 3:12-cv-00731-DMS-WVG, 3:12-cv-00737-DMS-WVG, 3:12-cv-00739-DMS-WVG, 3:12-cv-00858-DMS-WVG, 3:12-cv-01627-DMS-WVG, 3:12-cv-01629-DMS-WVG, 3:12-cv-01630-DMS-WVG, 3:12-cv-01631-DMS-WVG, 3:12-cv-01633-DMS-WVG, 3:12-cv-01634-DMS-WVG, 3:12-cv-01636-DMS-WVG, 3:12-cv-01640-DMS-WVG, 3:12-cv-01642-DMS-WVG, 3:12-cv-01644-DMS-WVG, 3:12-cv-01646-DMS-WVG, 3:12-cv-01648-DMS-WVG, 3:12-cv-01649-DMS-WVG, 3:12-cv-01650-DMS-WVG, 3:12-cv-01651-DMS-WVG, 3:12-

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6. All information required by Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6):

None.

/s/ Robert F. Ruyak
Robert F. Ruyak

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CONFIDENTIAL MATERIAL OMITTED

The material redacted from this brief is subject to a protective order. The confidential information on pages 5, 6, 8, 10, 15, 19, 24, 45, 46, 47, and 48 relates to confidential settlement information.

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STATEMENT OF RELATED CASES

This case was previously before this Court in *Ameranth, Inc. v. Domino's Pizza, LLC*, 792 Fed. Appx. 780 (Fed. Cir. 2019), Circuit Judges Prost, Plager, and Dyk.

By order dated June 3, 2022 (Doc. 14), the Court designated No. 2022-1200 as a related companion case to be assigned to the same merits panel and heard together with 29 other cases that “appear to be related and involve the same patent.”¹

On October 17, 2022, this Court (Doc. 23) consolidated Nos. 2022-1200 and 2022-2223 and directed that the consolidated appeals be companion cases to Nos. 2022-1655, *et al.*

¹ Federal Circuit Nos. 2022-1655, 2022-1657, 2022-1660, 2022-1661, 2022-1662, 2022-1663, 2022-1666, 2022-1667, 2022-1668, 2022-1669, 2022-1671, 2022-1672, 2022-1673, 2022-1674, 2022-1675, 2022-1676, 2022-1677, 2022-1678, 2022-1679, 2022-1680, 2022-1681, 2022-1682, 2022-1683, 2022-1684, 2022-1686, 2022-1687, 2022-1689, 2022-1690, 2022-1692.

I. INTRODUCTION

Years of heavily contested litigation culminated in this Court’s decision, affirming-in-part and vacating-in-part, a summary judgment ruling against Ameranth, resulting in twelve of the ’077 patent’s eighteen claims being found ineligible under 35 U.S.C. §101. *Ameranth, Inc. v. Domino’s, LLC*, 792 Fed.Appx. 780 (Fed. Cir. 2019) (“*Domino’s*”). The district court subsequently declared this case exceptional under 35 U.S.C. §285 and awarded \$2.7M in fees to Domino’s for the entire case.

The starting point and fulcrum for the district court’s exceptional case determination was a settlement on appeal, and vacated judgment resulting from, this Court’s mandatory mediation program in 2011 in an altogether different matter. *See Ameranth, Inc. v. Menusoft Sys. Corp.*, 463 Fed.Appx. 920 (Fed. Cir. 2012) (“*Menusoft*”). In the district court’s opinion, the trial judgment, settlement and vacatur in *Menusoft*—which antedated the issuance of Ameranth’s ’077 patent, involved claims of different patents (the ’850 and ’325), and did not address §101 eligibility at all— “weakened” the presumption of validity and placed a “cloud” over all of Ameranth’s patents and all claims thereof, even those not yet issued, like the ’077. Carrying this flawed perspective throughout its §285 analysis, the district court’s admittedly “clouded” view ignored, discounted, or simply dismissed critical events and circumstances that occurred over the next six years of

litigation in *Domino*’s. Foremost among the key events that, under governing legal standards, strengthened and reinforced (rather than weakened) the ’077 claims’ statutory presumption of validity: the PTO granted the ’077 claims in 2012 *after* and *over Menusoft*’s prior art and judgment, thus endowing the claims with the statutory presumption of validity; and an unbroken series of PTAB decisions between 2013 and 2017, rebuffing every validity challenge Domino’s and others aimed at the ’077 patent under 35 U.S.C. §§ 101, 103, and 112, with detailed explanations why the ’077 differed from other Ameranth patents held invalid (including the patent claims in *Menusoft*). Appx400-403, Appx1191-1231, Appx848-869. Yet the district court decided that Ameranth, as a “reasonable litigant” should have “known” as early as 2012 that the yet-to-be-issued claims of the ’077 patent were ineligible, and awarded fees from that point on.

The district court’s failure to account for these—and other—post-*Menusoft* circumstances defines its failure to properly consider the “totality of the circumstances” and constitutes legal error for which its §285 finding, and concomitant fee award, should be reversed.

The series of PTAB decisions rejecting all challenges to the ’077 illuminates why the purported “cloud” attributed to the vacated *Menusoft* judgment is a legally indefensible illusion. Declining defendants’ early 2013 attack, the PTAB stated: “we determine that the information presented in the Petition does not establish that

any of claims 1-18 of the '077 Patent are more likely than not unpatentable.”

Appx1231. The defendants tried again in 2015. They failed. *See* Appx1236. And when the defendants returned to the PTAB in 2017, they failed again. That final attempt is significant because defendants invoked §101 to argue that the '077 was invalid under the Supreme Court’s decisions in *Alice Corp. PTS. Ltd v. CLS Bank International*, 573 U.S. 208 (2014) (“*Alice*”) and *Mayo Collaborative Serv. v. Prometheus Lab., Inc.*, 566 U.S. 66 (2012) (“*Mayo*”) and this Court’s decision in *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016) (“*Apple*”). *See, e.g.*, Appx1273, Appx1286, Appx1294-1296, Appx1299, Appx1310. Once more declining to institute, however, the PTAB explained why those cases did not warrant a different result:

One of the later cases Petitioner specifically relies upon in its Petition is *Apple* In that case, the Federal Circuit upheld the Board’s determination that claims from several patents related to the '077 patent were unpatentable under 35 U.S.C. § 101. There are, however, a number of limitations found in the '077 patent claims that are not in the related patents. Appx858 at n.1 (internal citations omitted).

We are not persuaded that this analysis [in its 2014 decision] is in tension with *Alice*, its predecessor *Mayo*, or its progeny, and, therefore, we are not persuaded that we should institute this ground due to subsequent statement of the existing law. Appx860-861.

In this litigation, Ameranth pursued a course that aligned exactly with the PTAB’s rulings. After *Apple* was decided in November 2016, Ameranth limited

its case against Domino's solely to '077 claims, all of which had withstood defendants' barrage of attacks. And Ameranth ceased enforcing claims of all patents that had been held invalid. On that basis, the district court—with the acquiescence of Domino's and all defendants in the companion cases—permitted and scheduled litigation to proceed toward trial on Ameranth's '077 claims.

When it ultimately declared this case exceptional, the district court harshly criticized Ameranth for enforcing its '077 claims—even after the PTAB's favorable decision—on the incorrect premise that the PTAB's 2017 denial of review after *Alice* and *Apple* did not constitute a substantive application of those cases to the '077. Appx11 at 3-10. Yet it did. That manifest error alone unravels the district court's entire exceptionality analysis.

First, the plain language of the PTAB opinions contradicts the foundation upon which the §285 finding depends.

Second, the district court erred in its failure to adhere to this Court's recognition that such PTAB decisions are probative evidence that a party's enforcement of patent claims that withstood review is objectively reasonable. *See Old Reliable Wholesale, Inc. v. Cornell Corp.*, 635 F.3d 539, 549 (Fed. Cir. 2011) (“...the fact that the PTO confirmed the validity of the ‘950 patent on reexamination provides probative evidence on the issue of whether Old Reliable had a reasonable basis for its assertion...”).

Third, by conflating the '077 claims that withstood every attack at the PTAB with claims of other patents held invalid, the court's exceptionality analysis violates the bedrock principle that each claim of each duly-issued patent is entitled to a presumption of validity that is "never annihilated, destroyed, or even weakened regardless of what the facts are of record" (*see ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1574-75 (Fed. Cir. 1984)), unless and until *that claim* is extinguished by final judicial or administrative decree. These foundational errors impacted every other basis the court relied on in deeming Ameranth's enforcement of '077 claims unreasonable. And the errors broadly resonated, affecting the disposition of still other '077 claims against defendants in the 29 companion appeals².

Fourth, in assessing the reasonableness of Ameranth's '077 enforcement, the district court criticized not only Ameranth's reliance on the favorable PTAB actions and the presumption of validity, but also Ameranth's reliance on—and compliance with—other judicial orders, including the court's unopposed order to proceed toward trial on the '077 claims.

These included Ameranth's successful participation in court-ordered mediation that resulted in SETTLEMENT TERM settlements: one in this Court's Appellate Mediation Program in 2011 and another that Judge Sabraw himself mandated. The

² *See* Statement of Related Cases, *supra*.

criticism leveled against Ameranth in the exceptionality opinion is thus contrary to precedent holding that a party cannot be sanctioned for litigation efforts it was permitted to pursue. *Munchkin, Inc. v. Luv n' Care, Ltd.*, 960 F.3d 1373, 1381 (Fed. Cir. 2020). And it is irreconcilable with well-settled precedent that the settlement of disputes is desirable and should be promoted. *See, e.g., Hartley v. Mentor Corp.*, 869 F.2d 1469, 1473, n. 5 (Fed. Cir. 1989).

The district court's reliance on late-stage settlements to draw adverse inferences about Ameranth's motives is all the more erroneous because the court raised the issue *sua sponte*, lacked any record of the actual facts, circumstances, or amounts of the settlements, and made inaccurate findings before the parties knew the matters were under consideration in the §285 analysis. With all those shortcomings, the district court committed clear error in equating Ameranth's licensing settlements, including its AMOUNT settlement with Pizza Hut, to nuisance-value settlements imposed on unsophisticated parties early in the cases that the court cited.

Fifth, in quantifying fees, the district court erred by awarding all fees incurred by Domino's during the entire case and failed to relate the amount awarded to the aspects of the case that informed the exceptionality finding. This Court has never affirmed an exceptional case finding based even in part on the situation presented here. Patent owners are entitled to enforce statutory rights that

the PTO granted, that withstood multiple challenges year after year and that, under law, are protected by a presumption of validity. The exceptional case ruling should be reversed.

II. JURISDICTIONAL STATEMENT

This Court's jurisdiction over this appeal from the United States District Court for the Southern District of California rests on 28 U.S.C. §1295(a)(1). *See* Fed. R. App. P. 4(a)(4)(B)(i).

This case arises under the United States patent laws and jurisdiction exists under 28 U.S.C. §§ 1338(a) and 1400(b). Ameranth appeals the following: (1) Order Granting Domino's Second Renewed Motion to Declare Case Exceptional and to Award Attorney's Fees and Non-taxable Costs (Appx1-21); (2) Order Denying Ameranth's Motion to Retax Costs (Appx22-25); (3) Order Granting Domino's Request for Fees and Costs (Appx26-32); (4) Order Granting Ameranth's Motion for Issuance of a Final and Appealable Amended Judgment (Appx33-36); and (5) Clerk's Judgment (Appx37-40).

Notices of appeal were filed six days after the Final and Appealable Amended Judgment and seven days after the district court order extending the time to appeal. Appx2681-2684. This Court denied Domino's Motion to Dismiss No. 2022-1200 on timeliness grounds on October 17, 2022. Doc. 23.

III. STATEMENT OF THE ISSUES

1. Did the district court abuse its discretion in assessing the totality of circumstances in a §285 analysis?
 - a. Did the court err by disregarding critical factors such as: the ‘077 claims’ presumption of validity from its issuance in 2012; the PTO’s granting, and subsequent PTAB decisions supporting, the continued validity of the ‘077 claims; and the existing uncertainty in the law of patent eligibility under §101?
 - b. Did the court err by penalizing a patent owner’s continued enforcement of the claims by relying on: the ‘077 claims’ presumption of validity and the PTAB’s repeated reasoned rejections of all invalidity challenges; and the full acquiescence of Domino’s and all defendants to the court’s approval and order to proceed toward a 2018 trial on the asserted claims of the ‘077 patent?
 - c. Did the court err by improperly considering and misconstruing prior judicial actions that: mandated mediations that led to very **SETTLEMENT TERM** of other cases; and a thrice confirmed court-ordered vacatur of a judgment in another case?
2. Did the district court’s award of full fees from the inception of the

case in 2011 comply with governing standards, including the requirement that the amount awarded must be related to the basis for finding exceptionality, where there was no sanctionable conduct and where the ‘077 claims were not found invalid until September 2018?

IV. STATEMENT OF THE CASE

Because the district court’s “exceptional case” assessment relied extensively on proceedings in other courts and forums, and involved patents other than the ‘077, a full understanding of those proceedings is necessary.

A. Ameranth’s History, Technology and Patents

Inventor and current President Keith McNally founded Ameranth more than twenty-five years ago to develop and provide innovative wireless, real-time communications technology and associated computer software and hardware systems that would enhance the efficiency of hospitality-focused enterprises such as hotels, restaurants, entertainment venues and similar establishments. Appx339, ¶8; Appx779.

Ameranth’s inventions and development of these systems resulted in the issuance by the PTO of five patents: the ‘850 (2002), ‘325 (2005), ‘733 (2006), ‘077 (2012) and ‘060 (2015). *See* Appx341-342, Appx347, Appx352, Appx356. In addition to sales of its own products, Ameranth has licensed to forty-seven sophisticated royalty-paying entities. Appx340, ¶10; Appx779-780.

B. Ameranth’s Licensing and Enforcement of Its Patent Portfolio

E.D. Texas: Ameranth filed its first enforcement action in 2007 in the Eastern District of Texas against Menusoft, Inc. (Case No. 2:07-cv-0271), alleging infringement of various claims of Ameranth’s ’850, ’325 and ’733 patents. *See* Appx460. Three years later, Ameranth sued six more companies for infringement in the same federal court. Trial in *Menusoft* resulted in a September 2010 jury verdict finding that the seven asserted claims of the ’850, ’325 and ’733 patents³ were not infringed and were invalid as anticipated (35 U.S.C. §102) and obvious (35 U.S.C. §103). Appx493-501. While Ameranth’s appeal from the judgment was pending, the parties successfully participated in this Court’s mandatory mediation program. Appx2313-2316. Settling the infringement action, Menusoft licensed Ameranth’s patents and agreed to SETTLEMENT TERM a SETTLEMENT TERM that is SETTLEMENT TERM. Appx2270-2271, Appx2419.

Based on this SETTLEMENT TERM settlement, Magistrate Judge Payne granted the parties’ joint request to vacate the *Menusoft* judgment. Appx841-843, Appx1406. In so doing, he considered and rejected objections filed by amici who were defendants in other infringement cases brought by Ameranth and found that vacatur was “in the interests of the parties and the public.” *Id.*

³ The three patents have a total of 47 claims. Appx368-382, Appx383-399, Appx423-440.

That vacatur was challenged and revisited twice in the present case. Each time, the district court, Judges Sammartino and Sabraw, upheld it, finding that the vacated judgment did not have any preclusive effect. Appx2869, Appx2873-2875, Appx3268-3270.

S.D. Cal.: In August 2011, Ameranth filed enforcement actions in the Southern District of California, including against Domino's, Pizza Hut, Papa John's, and OpenTable. Appx2708-2733. The original complaints alleged infringement of claims of the '850 and '325 patents. Appx2714-2721, Appx2722-2729. In March 2012, Ameranth's '077 patent (which is the subject of the judgment in these appeals) was issued over all the prior art introduced in, and the judgment entered by, the district court in *Menusoft*, which Ameranth submitted to the PTO during prosecution of the '077. Appx400-421. Ameranth then added allegations that Domino's and other defendants infringed claims of the newly-issued '077 patent, and another patent, the '733, and sued additional defendants. *See* Appx335-366. All cases filed in the Southern District were subsequently consolidated for pre-trial proceedings. Appx330-334.

In October 2013, Apple, Domino's and other defendants filed PTAB petitions challenging the validity of each asserted claim of the four patents. *See* Appx3271.

At defendants' request, the consolidated cases were stayed pending

resolution of these petitions. Appx3271-3275.

C. PTAB Denied Review of All CBM Challenges to the '077 Patent

The PTAB instituted CBM review of some claims of the '733, '850 and '325 patents in March 2014. The history of those PTAB petitions and Ameranth's unbroken success on the '077 challenges is central to how this litigation proceeded and plays a pivotal role in the totality of circumstances relevant to the §285 decisions.

Although the PTAB found certain claims of those three patents to be invalid, the PTAB repeatedly and consistently declined to institute any proceeding challenging the '077 claims on any ground. The PTAB panel stated: "...we determine that the information presented in the Petition does not establish that any of claims 1–18 of the '077 Patent are more likely than not unpatentable." Appx1231. And it explained in detail how the '077 claims differed from the others. Appx1191-1231.⁴

In 2015, various defendants filed new CBM petitions seeking review of the still valid claims of the '325 and '850 patents under §§103, 112 and 101, and two petitions seeking review of the '077 patent under §§112 and 103. Again, the

⁴ On the three other patents, the same panel of PTAB judges found all but ten claims of the '850 and '325 patents ineligible under §101; and it found some claims of the '733 patent ineligible under §101, but that others (3, 6-9, 11 and 13-16) were valid. *See Apple, supra*, 842 F.3d at 1236, n. 2.

PTAB granted review of the ‘850 and ‘325 patents and found the challenged claims invalid under §103, but again denied review of the ‘077 claims. *See* Appx1236.

On appeal from the first PTAB rulings on the other three patents, this Court affirmed-in-part and reversed-in-part. All asserted claims of the ‘850, ‘325, and ‘733 patents the PTAB considered were held ineligible under §101. *Apple*, 842 F.3d at 1245.⁵

Defendant Starbucks in 2017 made yet another attempt at PTAB review of ‘077 claims. Appx848-869. This petition cited both the Supreme Court’s *Alice* (2014) and this Court’s *Apple* (2016) decisions as new authorities. *See, e.g.*, Appx1273, Appx1286, Appx1294-1296, Appx1299, 1310. The PTAB, applying and considering both cases, again rejected attacks on the ‘077, stating:

Our analysis in the 14 Decision was based on the specific application of the alleged abstract idea claimed in the ‘077 patent and our determination, based on the record in the 14 Proceeding, that the claims were directed “to a specific computer-aided system programmed by software to perform specialized functions.” 14 Dec. 40. We are not persuaded that this analysis is in tension with *Alice*, its predecessor *Mayo*, or its progeny, and, therefore, we are not persuaded that we should institute this ground due to subsequent statement of the existing law.

⁵ The ten ‘850 and ‘325 claims originally held eligible, but later found obvious in the second CBM, were not part of that appeal. They were the subject of a separate appeal, Nos. 16-2678, -2679, -2680, and -2681, that Ameranth later withdrew. Appx3734-3738; *see also infra* at 14.

Appx860-861.

D. After The PTAB and *Apple* Decisions, The District Court Lifted the Stay and Scheduled Pretrial Proceedings and Trials on Ameranth's '077 Claims

The PTAB's post-*Alice*/post-*Apple* decision concluded the review proceedings for which the consolidated cases had been stayed. Ameranth moved the district court to permit the S.D. Cal. cases to resume. Ameranth also dismissed its appeal (*see n. 5, supra*), dropped all claims of the '850, '325 and '733 patents from all pending cases, and advised the defendants and the district court that it would continue to assert only the '077 claims. Appx3726-3729.

Consistent with Ameranth's repeated CBM successes on the '077 claims, no defendants asked to preserve the stay, nor did any seek a ruling from the district court on the eligibility of '077 claims. Rather, they filed a Statement of Non-Opposition. Appx3744. So, with all parties' agreement—and consistent with the PTAB position on the '077 claims' validity—the district court lifted the stay. Appx3751-3752. It also issued a scheduling order regulating discovery and other pretrial proceedings, including claim construction. Appx3758-3764.

On December 14, 2017, the district court set a June 2018 deadline for summary judgment motions and scheduled the first trial (Pizza Hut) for late August 2018. Appx8351-8355. During the nearly year and a half of trial preparation, no defendant sought a district court ruling on the eligibility of the '077

claims.

It was not until the summary judgment deadline in June 2018, within three months of trial, that Pizza Hut filed the first motion⁶ of any defendant seeking such a district court ruling. Appx8594, Appx8607-8622. Domino's did not join in Pizza Hut's motion or file its own §101 motion by the deadline.

While Pizza Hut's motion was pending, and before trial commenced, Ameranth and Pizza Hut complied with the court's mandatory settlement conference requirement and reached a settlement before Magistrate Judge Gallo. Appx1361, ¶3, Appx9789, ¶10. Pizza Hut agreed to a **SETTLEMENT AMOUNT** of **SETTLEMENT TERM** in exchange for a **SETTLEMENT TERM**. Appx1364-1387.

With the Pizza Hut trial off-docket, Ameranth's case against Domino's was next in line, with trial scheduled for October 1, 2018. Appx9778. That case is the subject of this appeal.

E. Ameranth's Case Against Domino's

After Pizza Hut settled, Domino's sought leave to file a late joinder adopting Pizza Hut's now-moot §101 motion. Appx9814. The district court granted that request and permitted additional briefing on points specific to Domino's. Appx9837-9838. Less than a week before the scheduled trial, the court held

⁶ Pizza Hut's motion included the 2014 and 2017 PTAB decisions discussed *supra* at Section C. See Appx8651, Appx8693 (cover pages only to avoid duplication of documents in appendix).

fourteen claims of the '077 patent ineligible under §101—in direct conflict with the PTAB's prior '077 decisions. Appx10929-10942. Before that late September 2018 order, no court or other authority had determined that any claim of the '077 patent was ineligible or invalid on any basis.

This Court affirmed in part, upholding the finding that claims 1, 6-9, 11, and 13-18 of the '077 patent were ineligible, but vacated-in-part and remanded as to claims 4 and 5 for lack of jurisdiction. This Court did not award costs to either side on the appeal. *Domino's*, 792 Fed.Appx at 788.

F. The District Court's "Exceptional Case" Finding and Award of Attorney's Fees and Non-Taxable Costs

Domino's subsequently sought an "exceptional case" declaration and an award of \$2.7M in attorney's fees under §285. Domino's motion argued that Ameranth's '077 patent validity and infringement positions were weak (Appx476-478); that the vacated jury verdict in *Menusoft* and the PTAB decisions on review of the '850, '325, and '733 patents should have convinced Ameranth to cease enforcement of the '077 patent (*Id.*); and accused Ameranth of an assortment of alleged misdeeds (Appx480-481).

In response, Ameranth explained why Domino's had not satisfied its burden of proving exceptionality. On the specific asserted claims of the '077 patent, Ameranth described how and why the PTAB's multiple, consistent rejections of challenges to the '077 patent weighed dispositively against an exceptional case

finding. The PTAB had clarified why the ‘077 claims differed from claims of other Ameranth patents in ways that left its eligibility undisturbed and, further, why its conclusion on the ‘077 patent remained correct even after *Alice* and *Apple*. Appx754-756. In addition:

1. Ameranth pointed out that the only substantive issue that had been decided—§101 eligibility—was a controversial, unsettled area of law, and that this judicial uncertainty was a critical factor in weighing relative strength of legal positions in the totality of circumstances. Appx754. Ameranth recited that no claim of the ‘077 had been declared ineligible by any authority until the September 2018 district court decision. And Ameranth explained why Domino’s delay in seeking a ruling from the court on §101 until the eve of trial should weigh against an exceptional case finding. Appx755.

2. In addressing the vacated *Menusoft* judgment, Ameranth explained that the 2011 verdict involved only 7 of 51 claims of the ‘825, ‘350 and ‘733 patents, and did not involve *any* of the ‘077 claims asserted against Domino’s, which were all presumed valid. Nor did *Menusoft* involve any §101 issue. And the *Menusoft* verdict had been vacated by the trial court and could have no further effect. Appx754-755.

3. Ameranth pointed to inaccuracies in Domino’s description of the facts surrounding claim construction; and Ameranth explained why those inaccuracies,

on a disputed factual issue that the court never resolved, were irrelevant to the §101 holding upon which the judgment was based. Appx767-775.

4. Ameranth also argued that, even if the court were to make an exceptional case finding, Domino's request for fees covering the entire litigation should be reduced. Fees should not be awarded, for example, for the PTAB review proceedings in which defendants' challenges to the '077 patent were repeatedly unsuccessful. Appx775-776.

Without a hearing (Appx1131), the district court found that the case was "exceptional" and awarded massive attorney's fees dating back to the beginning of the case in 2011:

1. The court found that the judicially approved *Menusoft* vacatur supported Domino's contentions on the weakness of Ameranth's litigation position. In the court's view, *Menusoft* placed a cloud over all Ameranth's patents that made enforcement efforts unreasonable. Appx8 at 14-18. The opinion omits any reference to: (1) the Texas court's vacatur was later revisited by two federal judges in California (Judge Sammartino and Judge Sabraw) who agreed that the vacatur removed any preclusive impact; or (2) that the '077 patent had not yet been issued when the *Menusoft* case settled. Nor does the opinion consider that the PTO issued the '077 patent after *Menusoft* and after Ameranth had submitted all the prior art references in that case and the *Menusoft* judgment to the PTO during

prosecution Appx400-403. The district court's assessment of the totality of circumstances did not acknowledge the unsettled state of the law on §101.

2. The district court rejected Ameranth's contention that the PTAB's denial of multiple petitions to review '077 claims weighed against finding the case exceptional. The opinion omits any mention of the PTAB's explanation why review of the '077 was unwarranted even after *Alice* and *Apple* and accepts Domino's contention that the PTAB did not substantively consider those cases. Appx11. The opinion concludes that "no reasonable patent litigant would believe" the '077 patent was viable. Appx12.

3. Although not advanced by Domino's as a basis for exceptionality, the court viewed Ameranth's settlements with Menusoft and Pizza Hut negatively as indicative of Ameranth's belief that the patents were weak. Appx8, Appx 20. And the court found the timing of the Pizza Hut settlement "troubling." *Id.* The opinion does not mention that the settling defendants [REDACTED] in return for [REDACTED] or that the Pizza Hut the case was settled on the date the court itself set for the mandatory mediation. Appx1361, ¶3, Appx1364-1387.

4. Without acknowledging the many claims Ameranth dropped after *Apple*, limiting the litigation solely to the '077 patent, the court found that Ameranth failed to reassess its case after *Alice* and after *Apple*, where this Court found certain claims of the '850 and '325 patents ineligible. Appx11, 17-18. The

court concluded that “...the record reflects that Ameranth pushed ahead without any apparent concern that the ‘077 Patent might be found unpatentable

Ameranth’s intent to continue with this litigation, and to pursue litigation on other patents from the same family, is indicative of its obstinate position, and suggests a need to deter similar conduct in the future.” Appx18.

5. Addressing Domino’s contentions about litigation of the term “synchronous,” the court found that any perceived inconsistencies could indicate weakness in Ameranth’s position on the issue of infringement. The court did not explain how this could impact the “exceptional case” analysis where this factual dispute was new, never resolved, and did not relate to patent eligibility under §101. On Domino’s other challenges to Ameranth’s litigation conduct, the court found that they were either not supported by the record, did not amount to misconduct, or had no bearing on the litigation and were not sufficient to make the case exceptional. Appx13-15. The court concluded that the “manner in which this case was litigated is not the stronger of the Domino’s Defendants’ arguments, but it, too, supports a finding that this case is exceptional.” Appx18.

6. Turning to quantification of the fee award in a separate opinion, the court accepted Domino’s request to be compensated for all litigation back to 2011. The court made a “holistic” total award to Domino’s of more than \$2.7 million for the entire case from inception, including fees for the multiple PTAB petitions in

which the ‘077 claims prevailed, and for all the litigation that pre-dated the PTAB decisions, the *Alice* and *Apple* decisions, and the court’s own §101 summary judgment in September 2018. Appx26-31.

Ameranth filed a motion for reconsideration that addressed inaccuracies in the district court’s descriptions of the *Menusoft* and *Pizza Hut* settlements, a subject not set forth in Domino’s motion and that the court raised *sua sponte*. Ameranth explained that given the settlements, the court’s criticism and comparisons to cases involving “nuisance value” settlements were inapt. Appx1143-1146. And since the settlements were not in the record and available to the district court when it issued the exceptionality order, Ameranth provided that information. The district court denied reconsideration. Appx2444-2446.

V. SUMMARY OF THE ARGUMENT

The districts court’s finding that this is an “exceptional case” under §285 is deeply flawed by its departure from both legal precedent and the factual record. Its failure to correctly apprehend and apply the “totality of the circumstances” standard was an abuse of discretion. The court omitted critical, dispositive circumstances; drew unwarranted negative inferences from an incomplete assessment of the facts; incorrectly gave great weight to a vacated judgment; disregarded the bedrock legal rule that an issued patent claim bears a presumption of validity that is only overcome by clear and convincing evidence; and did not

follow the governing principles for assessing the relative strength of the parties’ legal positions at relevant times during the litigation. These critical errors—and more—mandate reversal.

The pivotal events that the court erroneously relied on are the trial judgment, settlement on appeal, and vacatur in the *Menusoft* case in 2011 involving only certain ‘850 and ‘325 patent claims. Contrary to two subsequent S.D. Cal. rulings in 2013 that the judicial vacatur would not be “second guess[ed]” or disturbed (Appx2875, Appx3269), the district court now viewed *Menusoft* as the linchpin for finding Ameranth’s subsequent enforcement of any patent to be unreasonable. The court also drew unwarranted negative inferences from the settlement Ameranth and Menusoft reached in this Court’s mandated mediation program, ignoring the public policy favoring dispute resolution. In the court’s view, this singular event forever damaged and “weakened” the presumption of validity and placed a “dark cloud” over all other Amaranth patents and claims, including those of the ‘077 that had not even issued at the time. The district court’s erroneous, hindsight conclusion in 2021 is that Ameranth should “just have known” in 2011 that all claims of all of its patents—present and future—were invalid and ceased all enforcement actions. That revisionist history wholly conflicts with the law and the factual record, fails to properly consider the “totality of the circumstances” required in determining an exceptional case, and dooms the court’s decision.

1. Ignoring the PTO's post-*Menusoft* issuance of the '077 and dismissing the PTAB's decisions and analysis as irrelevant, the district court anchored its fee award on the faulty premise that "no reasonable patent litigant would have believed the claims in the ['077] patent were viable." Appx12. That conclusion is contrary to this Court's guidance on implementing §285.

2. The court must analyze the totality of circumstances in deciding whether the party seeking fees has met its burden of proof. That did not happen here. The fee award is based neither on the totality nor the actuality of the circumstances. The award, moreover, violates this Court's instructions that: (1) a party cannot be penalized for litigating a claim it was permitted to pursue (*Munchkin*, 960 F.3d at 1381); (2) each claim of a patent is a separate invention which is presumed valid (*Comair Rotron, Inc. v. Nippon Densan Corp.*, 49 F.3d 1535, 1539 (Fed. Cir. 1995)); and (3) a patentholder's enforcement of a duly-issued patent is presumed to be in good faith (*Medtronic Nav. v. Brainlab Medizininische*, 603 F.3d 943, 954 (Fed. Cir. 2010).)

A key example demonstrates how the district court's failure to acknowledge the pervasive uncertainty in patent eligibility standards eroded the foundation for its §285 analysis. The court's stated rationale rejected Ameranth's contention that it was reasonable to rely on the PTAB decisions. Instead, the court accepted Domino's argument that in declining to institute review of the '077 patent post-

Alice and post-*Apple* the PTAB “did not... find the claims of the ‘077 Patent ‘to be valid and patentable.’” Appx11 at 7-8. The court thus concluded that “the PTAB decisions do not support Ameranth’s argument that it had a reasonable basis to believe the claims of the ‘077 Patent were valid after *Alice* and *Apple*.” Appx11 at 8-10.

But the reality is that the PTAB’s decisions not to institute review, even post-*Alice*/post-*Apple*, flatly contradict the district court’s characterization. The PTAB explained why its conclusion—that the ‘077 claims were directed “to a specific computer-aided system programmed by software to perform specialized functions”—applied even after *Alice* and *Apple*. Appx858-859. The PTAB made clear that its analysis was not “in tension with *Alice*, its predecessor *Mayo*, or its progeny, and, therefore, we are not persuaded that we should institute this ground due to subsequent statement of the existing law.” Appx860-861.

This Court and numerous district courts recognize such PTAB decisions as objective evidence that a patent owner’s enforcement efforts are not unreasonable.

Further indicia of the objective reasonableness of Ameranth’s enforcement efforts on the ‘077 patent include: (1) the dozens of industry-leading corporations that sought licenses and agreed to large royalty payments without litigation; (2) the business decisions made by sophisticated companies to settle infringement actions and pay SETTLEMENT TERM sums to license the patented technology; and (3) the knowledge

of all parties to these licenses and settlements that no court had ever found the '077 claims to be ineligible or invalid on any basis.

3. Among the district court's other stated justifications for a §285 award were Ameranth's successful participation in mandatory court-ordered mediations settling prior cases (including a case settled in this Court's mediation program); and Ameranth's reliance on three consistent judicial rulings (including one by Judge Sabraw) regarding the vacatur of a judgment in a case in another court addressing other patents—not the '077. These stated justifications do not satisfy governing legal principles, do not withstand factual analysis, and do not support the §285 sanction imposed in this case.

Patent owner Ameranth was confronted throughout the litigation with events and facts that could have led to only one reasonable conclusion: that it had the statutory right, and the court's approval, to continue enforcing the presumed valid claims of the '077 patent through and until an adverse §101 decision in September 2018. Had the court properly considered all circumstances, it could not have found this case exceptional.

Although the district court's exceptionality decision targets the post-*Apple* period, it shifted fees “holistically” for the entire case *ab initio*, awarding Domino's fees for multiple petitions for review at the PTAB (none of which resulted in review or invalidation of the '077 patent) and for the entire time period

through September 2018, during which the ‘077 claims remained viable and presumed valid. In quantifying fees in this manner, the district court contravened governing legal standards.

VI. ARGUMENT

A. Standard of Review

This Court reviews the grant or denial of attorneys' fees for an abuse of discretion. *Highmark Inc. v. Allcare Health Mgmt. Sys., Inc.*, 572 U.S. 559, 564 (2014). The district court abuses its discretion when it makes “a clear error of judgment in weighing relevant factors or in basing its decision on an error of law or on clearly erroneous factual findings.” *Bayer CropScience AG v. Dow AgroSciences LLC*, 851 F.3d 1302, 1306 (Fed. Cir. 2017) (internal quotation marks omitted).

This Court exercises plenary review (*de novo*) of a trial court’s interpretation of precedent. *Bass Enters. Prod. Co. v. United States*, 133 F.3d 893, 895 (Fed. Cir.1998); *Volkswagen of Am., Inc. v. United States*, 540 F.3d 1324 1330 (Fed. Cir. 2008). The *de novo* standard applies to the district court’s application of legal standards in its §285 analysis. *Gaymar Indus., Inc. v. Cincinnati Sub-Zero Prods., Inc.*, 790 F.3d 1369, 1372 (Fed. Cir. 2015).

B. The District Court’s Exceptional Case Analysis Is Contrary to the Fundamental Legal Requirement to Consider “Both the Governing Law and the Facts of the Case.”

The touchstone of an exceptional case determination is judicial consideration of “the totality of the circumstances” *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 572 U.S. 545, 554 (2014). This encompasses considerations of both law and fact: “(A)n ‘exceptional’ case is simply one that stands out from others with respect to the substantive strength of a party's litigating position (*considering both the governing law and the facts of the case*) or the unreasonable manner in which the case was litigated.” *Id.* (emphasis added).

Ameranth need not have an unassailable litigation position, because that is not the standard for finding a case “exceptional.” *Stone Basket Innova., LLC v. Cook Med., LLC*, 892 F.3d 1175, 1180 (Fed. Cir. 2018). If it were so, the standard would swallow up the “exception”—with every case ultimately lost susceptible to classification as exceptional and every prevailing party encouraged to request a fee award. The correct question is whether, in the totality of circumstances, Ameranth’s belief that it had a right to enforce its patents was reasonable, as opposed to “hopeless” or “baseless.” *SFA Systems, LLC v. Newegg Inc.*, 793 F.3d 1344, 1348 (Fed. Cir. 2015) (“A party’s position on issues of law ultimately need not be correct for them to not ‘stand out,’ or be found reasonable”); *see also AdaptiveStreaming Inc. v. Netflix, Inc.*, No. 8:19-01450-DOC-KES, 2020 WL

2573471 at *2 (C.D. Cal. Mar. 11, 2020) (“Plaintiff’s claims were not so baseless or ‘hopeless’ so as to warrant attorneys’ fees. And, ‘(i)n view of the evolving nature of §101 jurisprudence,’ Defendant’s arguments as to the “clearly” abstract nature of Plaintiff’s patent are unpersuasive.”) (citing *Gust, Inc. v. Alphacap Ventures, LLC*, 905 F.3d 1321, 1329 (Fed. Cir. 2018)).

This Court vacated a \$285 fee award in *Large Audience Display Sys., LLC v. Tennman*, 660 Fed.Appx. 966 (Fed. Cir. 2016) precisely because the “district court based its ruling, to some extent, on both a misunderstanding of what factors are relevant to an exceptionality determination and a clearly erroneous view of the record evidence.” It explained that:

(T)he circumstances upon which a district court relies must actually exist, and findings that such circumstances do exist must be justified by the record. Here, many of the “circumstances” deemed dispositive by the district court, including but not limited to those noted, *supra*, either did not occur or were given undue weight.

Id. at 971.

1. **Contrary to the Presumption of Validity, The District Court Erroneously Concluded That Ameranth Should Have Known that the ‘077 Claims Were Invalid From Their 2012 Issuance Date**

In assessing the relative strength of the parties’ legal positions, the district court ignored the PTO’s post-*Menusoft* issuance of, and the substance of all PTAB decisions on, the ‘077 claims. Instead, the court conflated the ‘077 claims with those of three other patents. By summarily discounting the PTAB’s rejections of

repeated attacks on the '077 patent, its opinion reflects a profound misunderstanding of the PTAB review process and a total obliviousness to the detailed PTAB explanations. The district court's omission or misapprehension of the actual circumstances irredeemably dooms its §285 ruling.

a. The PTAB's Repeated Decisions Finding That the '077 Claims Were Different And Presumed Valid Confirmed the Reasonableness of Ameranth's Continued Assertion of '077 Claims

Disregarding their statutory presumption of validity under 35 U.S.C. 282(a), and having failed to recognize the differences between the '077 claims and those of other Ameranth patents ('850, '325, '733) reviewed by the PTAB and this Court on appeal, the district court reasoned that Ameranth should have known that the '077 claims were similarly invalid. But the record says exactly the opposite. Until the district court's September 2018 summary judgment, the only authority that reviewed all claims of the four Ameranth patents—the PTAB—expressly distinguished the '077 claims from all the others.

These distinctions by the PTAB, ignored by the district court, are of paramount importance since the PTAB explained its decision not to review the '077 claims multiple times. Both before and after *Alice* and *Apple*, the PTAB reached the same result—the '077 claims are likely patent eligible and cannot be conflated with the others.

This Court has concluded that where PTO action on reexamination supports a party's position, it is probative of reasonableness. *See Old Reliable Wholesale*, 635 F.3d at 549; *see also Univ. of Pittsburgh v. Varia Med. Sys., Inc.*, 561 Fed.Appx. 934, 944 n. 3 (Fed. Cir. 2014).

And indeed, directly on point here, courts have held that the PTAB's declination to institute CBMs is objective evidence that a patentholder's position was reasonable—even where the district court later finds ineligibility. *See Konami Gaming Inc. v. High 5 Games LLC*, No. 2:14- cv-01483-RFB-NJK, 2021 WL 6497033 at *5 (D. Nev. Oct. 25, 2021) (“The PTAB declined to institute such review, citing High 5’s failure to demonstrate a reasonable likelihood of establishing the invalidity of any of the challenged claims in the ‘869 patent. While this Court disagrees with the PTAB’s findings with respect to validity, it acknowledges that the PTAB’s rejection supports Konami’s assertion that its litigating position was not objectively baseless or unreasonable to an outside evaluator with knowledge of patent law.”); *Global Cash Access, Inc. v. NRT Tech. Corp.*, 2018 WL 4566678 *3 (D. Nev. 2018) (“the fact that the PTAB declined to institute the two CBMs filed by NRT tends to show it was not objective, established fact that the ‘792 patent was invalid . . . while the Court disagrees with the PTAB with respect to the validity of the ‘792 patent, the fact that another tribunal specialized in patent law declined to institute a proceeding that could have

found the ‘792 patent invalid does tend to show that GCA’s position was not objectively baseless”).

This conclusion is even more compelling when, as here, the PTAB decisions set out the specific reasons for its refusal to institute. Such definitive language by the PTAB tribunal, the only authority other than the court legally empowered to review validity, necessarily reinforces the reasonableness of a patent owner’s confidence in the strength of its patent, the continued presumption of validity, and the right to enforce. *See Hyatt v. Kappos*, 625 F.3d 1320, 1334 (Fed. Cir. 2010) (en banc) (recognizing the deference owed the PTO as “the knowledgeable agency charged with assessing patentability”); *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1331 (Fed. Cir. 2008) (“This is not to say that the determinations made by the corps of examiners are not important, or should not be worthy of appropriate deference to their expertise in ... technical matters, especially when we have the benefit of well-reasoned explications.”).

Furthermore, the district court erred in crediting Domino’s demonstrably inaccurate summary of the PTAB decisions. Specifically, Domino’s argued that:

Ameranth continues to falsely assert that in the Starbuck’s ‘077 CBM, the PTAB substantively considered the petition, in light of the Apple decision, and ruled that the ‘077 patent was patent-eligible. To the contrary, *the PTAB made clear that its decision was not a substantive decision*, instead denying the petition because Starbuck had filed a previous petition. *The Apple case is never mentioned.*

Appx2244 (emphasis added). But the PTAB expressly said that its 2014 decision “found” that challenged ’077 claims fell “*within a category of patent eligible subject matter*,” and that defendants’ 2017 submission did not change that view Appx858 (emphasis added). And it expressly addressed *Apple*:

One of the later cases Petitioner specifically relies upon in its Petition is *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1235 (Fed. Cir. 2016). In that case, the Federal Circuit upheld the Board’s determination that claims from several patents related to the ’077 patent were unpatentable under 35 U.S.C. §101. There are, however, a number of limitations found in the ’077 patent claims that are not in the related patents. See Pet. 33–37; 43–52. Thus, we view *Ameranth* as providing another example of post-*Alice* analysis, but not as requiring a finding of unpatentability for the challenged claims in this proceeding.

Appx858.

Therefore, the district court incorrectly concluded “the PTAB decisions do not support Ameranth’s argument that it had a reasonable basis to believe the claims of the ’077 Patent were valid after *Alice* and *Apple*.” Appx11. This error is apparent from the plain, unambiguous language of the PTAB decisions.

The ’077 claims were entitled to a presumption of validity before defendants filed their petitions for review, and they were entitled to a presumption of validity after the PTAB denied the petitions for review. Under governing law, the PTAB decisions did not terminate, lessen or limit the ’077’s presumption of validity in

any way. That presumption continued and was essential to assessing the reasonableness of Ameranth's '077 enforcement efforts. There is no indication that the court considered the substance and significance of the PTAB's explanations for rejecting attacks on the '077 claims' validity.

This clear, reversible legal error is at the very foundation of the district court's exceptionality ruling and nullifies its conclusion under §285.

b. The Actions of Defendants and The Court Were Consistent with the PTAB's View That the '077 Claims Were Valid and Distinct And Ameranth's Enforcement was Reasonable

Another critical flaw in the §285 ruling is the district court's failure to account for the actions of Domino's, the party seeking fee-shifting. Domino's made no effort to obtain a ruling from the district court on eligibility following the PTAB's rejection of defendant's petitions. Domino's did not oppose the lifting of the stay that permitted the case to proceed toward trial. And Domino's remained mum on §101 eligibility throughout the many months of trial preparation until the eve of trial.

Domino's silence was surely reasonable in light of the PTAB's explanations why the '077 patent was not vulnerable to the validity challenges previously made and rejected. But it just as surely defeats Domino's fee-shifting request.

Thermolife Int'l LLC v. GNC Corp., 922 F.3d 1347, 1357 (Fed. Cir. 2019) (this

Court has “stressed that one consideration that can and often should be important to an exceptional case determination is whether the party seeking fees “provide[d] early, focused, and supported notice of its belief that it was being subjected to exceptional litigation behavior”).

If, as the court concluded, no reasonable litigant would have believed the '077 claims were not viable, that standard should have been applied to Domino's as well. It was not.

Absent the slightest hint from Domino's that the '077 claims' viability was still in question, how could it be unreasonable for Ameranth to advance the case for trial? And even under the district court's erroneous and retrospective view in 2021 that “no reasonable patent litigant would believe” the '077 patent was viable, why excuse Domino's—the party with the burden of proving its entitlement to fees? Either way, the governing §285 standards are not satisfied.

This Court's precedents show why Ameranth's continued enforcement was objectively reasonable. The presumption of validity applies with full force when the invalidity challenge is brought under the “abstract ideas” exception to §101. *Cellspin Soft, Inc. v. Fitbit, Inc.*, 927 F.3d 1306, 1319 (Fed. Cir. 2019) (“This presumption reflects the fact that the Patent and Trademark Office has already examined whether the patent satisfies ‘the prerequisites for issuance of a patent,’ including §101.”) (quoting *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91,

95-96 (2011)).

This presumption is strengthened, not lessened, when the PTAB denies repeated petitions to institute review and specifically sets forth, and reconfirms, its reasoning. Domino's belatedly joined and made a §101 challenge only after Pizza Hut settled, the deadline for motions had passed, and the parties expended substantial resources to prepare for the imminent trial.

Domino's delay in bringing the ineligibility motion, alone, warrants denying "exceptional case status" and fee-shifting. The Supreme Court decided *Alice* in 2014, more than four years before Domino's sought a district court ruling. Also weighing heavily against exceptionality is Domino's failure to object to lifting the stay in 2017. Had Domino's believed (as the district court said any reasonable patent litigant would) that the '077 claims were ineligible, how can it be excused for failing to seek a district court ruling on eligibility?

The district court's only explanation for Domino's total inaction on §101 eligibility during this critical period is that "many moving parts" in the litigation might have led Domino's attention elsewhere, ignoring that Domino's was part of a joint defense groups with dozens of firms and counsel. If it was so clear that "no reasonable patent litigant would believe" the '077 claims were valid, how could it be reasonable for Domino's and all the other defendants to put those other "moving parts" ahead of the case-dispositive issue that, in the court's view, made

enforcement unreasonable?

This Court’s precedents answer that question. It is reversible error for a district court to find an exceptional case based, in part, on a litigant pursuing litigation in reasonable reliance on district court orders allowing the litigation to go forward. *Munchkin*, 960 F.3d at 1381 (holding that “Munchkin cannot be faulted for litigating a claim it was granted permission to pursue,” citing *Checkpoint Sys., Inc. v. All-Tag Security S.A.*, 858 F.3d 1371 (Fed. Cir. 2017)). The orders lifting the stay and scheduling trial permitted—and required—Ameranth to move forward. This principle is even more applicable in this case where the only authority that had addressed §101 in the ’077 context—the PTAB—rejected the institution of invalidity review multiple times with clear explanations favoring eligibility.

c. The District Court Ignored the Pervasive Lack of Clarity and Guidance on §101 Patent Eligibility During the Critical Time Period Of This Case

The district court’s mistaken assessment of the PTAB’s consistent rejection of defendants’ §101 challenges to the ’077 patent is all the more incorrect because this case was litigated in an era of extreme instability on the underlying substantive legal principles. Standards for patent eligibility under §101 were shifting. How a claim would fare in the existing chaos was far from predictable. For the district court’s §285 analysis to weigh “relative strength” of legal positions without even

mentioning the raging §101 storm confirms that this case fails to satisfy the requirement of considering the totality of circumstances. As this Court stated in

Gust:

(i)n view of the evolving nature of §101 jurisprudence ... it is particularly important to allow attorneys the latitude necessary to challenge and thus solidify the legal rules without the chill of direct economic sanctions.

905 F.3d at 1329 (reversing §1927 award).

Isn't it penalty enough that patent claims prosecuted, allowed, issued, reviewed and approved by the PTO and PTAB, prior to landmark decisions like *Alice*, are subsequently invalidated under new §101 interpretations that retroactively jeopardize their validity? To go a step further, as the court did here, to find the enforcement of such patents "exceptional" and sanctionable is a bridge too far.

The Supreme Court's *Alice* and *Mayo* decisions generated confusion, discord, and uncertainty on eligibility. That reality placed patent holders and their previously-issued patents in precariously unpredictable positions on foundational questions of law that literally split this Court in half in *American Axle*. The confusion is so dire that past and present members of this Court, the PTO, and every segment of the patent law community have implored the Supreme Court for guidance and clarity, which has yet to come. See Brief for the United States as Amicus Curiae, p. 19-21, *American Axle & Manufacturing, Inc. v. Neapco*

Holdings LLC, et al., 142 S.Ct. 2902 (2022), *cert. denied* (“Ongoing uncertainty has induced ‘every judge (on the Federal Circuit) to request Supreme Court clarification,’” quoting Moore, J., concurring in denial of stay); *see also American Axle*, 967 F.3d 1347 at 1365 (Fed. Cir. 2020) (Stoll, J., dissenting from denial of rehearing en banc) (“Without clear direction from this court, the Patent Office and district courts will likely reach inconsistent results when assessing the patent eligibility of mechanical inventions In the face of our unwillingness to consider patent eligibility as a full court, I grow more concerned with each passing decision that we are. . .allowing the judicial exception to patent eligibility to ‘swallow all of patent law’”) (internal citations omitted). And the search for clarity continues. *See Interactive Wearables, LLC v. Polar Electro Oy*, No. 21-1281, 2022 WL 4651135, *1 (Oct. 3, 2022) (call for view of Solicitor General).

District courts should not, upon making a finding of unpatentability on the eve of trial, use hindsight to impose the extreme sanction of fee shifting under §285.

d. The District Court’s Statement That Ameranth Failed to Reassess Its Case After the Federal Circuit’s Decision in *Apple* Case Is Wrong And Contrary to the Record

The district court opinion relies on the flatly inaccurate view that Ameranth failed to assess the strength of its case after *Alice* and *Apple*. The record is directly opposite. After *Apple*, in January 2017 Ameranth withdrew its pending appeal to

this Court on ten claims of the ‘850 and ‘325 patents (*see* n. 5, *supra*), dropped enforcement of all the other claims of those patents in the consolidated cases, and continued to assert only the ’077 claims – on which the PTAB had repeatedly denied CBM review stating that it was more likely than not that the ‘077 claims *were patentable*.

The district court does not take into account that Ameranth did, in fact, pare down the case substantially, and in a way that conformed precisely to the PTAB’s actions. The absence of any recognition of these facts in the district court’s exceptional case analysis is particularly telling. Where the “circumstances” the court recites are inaccurate, the ruling is clear error.

2. The District Court Compounded its Errors in Articulating the Governing Legal Standards By Incorrectly Applying §285 Principles to the Record In Its Conclusory Findings of Fact

The district court distilled its assessment of “Ameranth’s overall litigation conduct” to a description fraught with subjective criticism that is contrary to the record and that clashes with the chronology of critical events. Starting with *Menusoft* and other decisions on other patents and ending with the 2018 summary judgment and appeal in this case, the court states that “those losses have not had a deterrent effect on Ameranth’s behavior.” Appx20. The court then takes a negative view of Ameranth for the judicial vacatur of *Menusoft*, for settling with *Menusoft* and *Pizza Hut*, and for appealing the summary judgment in this case.

And the court concludes that “this pattern of continued bullishness” makes this case exceptional. Appx21.

But it is axiomatic that it only takes one claim of one patent to find infringement. And all claims of the ’077 patent were alive, well, and entitled to the presumption of validity at least until the September 2018 summary judgment ruling.

Under settled legal principles, the PTO’s post-*Menusoft* issuance of the ’077 patent and the PTAB decisions rejecting every challenge constitute an “objectively reasonable” basis for Ameranth’s continued enforcement of the ’077 patent. *Supra* at 29-33. That is confirmed by the actions of the parties and court in resuming the litigation in 2017 in conformance with the PTAB rulings that this Court reviewed in *Apple*.

3. The District Court Consideration of the Vacated Judgment and Improper Inferences From the Settlements of the *Menusoft* and *Pizza Hut* Cases Contravene Governing Legal Standards For Finding Exceptionality

In 2013, Judge Sammartino ruled that she would not “second guess” the vacatur decision in *Menusoft*. Appx2875. And Judge Sabraw—who left that decision undisturbed by denying a motion to reconsider (Appx3269)—did precisely that. Citing “public policy concerns surrounding vacatur of patent invalidity findings,” the court made the vacatur a cornerstone of its exceptionality

decision. Appx8 at 6-20.⁷

The district court’s backtracking on its 2013 decision to adhere to the vacatur—which governed the case for years and on which the parties were entitled to rely—exemplifies how its disregard of the PTAB rulings impacted the entire §285 process.

Contrary to the presumption of validity to which the ‘077 claims were entitled, the district court concluded that the *Menusoft* verdict and vacatur “raise questions about the strength of those presumptions here.” Appx8 at 12-13. Even though the trial judge in *Menusoft* had in fact vacated the verdict, the exceptional case opinion proceeds on the stated premise that “claims in the ’850, ’325 and ’733 Patents were found invalid in *Menusoft*.” Appx8 at 13-14. And although recognizing that *Menusoft* did not even involve §101—and certainly did not involve any ’077 claims since the patent had not yet issued—the court still found that “...the *Menusoft* verdicts cast a cloud on the Patents, and indicated a weakness in Ameranth’s position.” Appx8 at 15-16. And it went even further, concluding that “Ameranth’s request to vacate those verdicts could be construed as an acknowledgement of that weakness...” Appx8 at 16-18.

Every step in that analysis is incorrect. This Court has consistently held that

⁷ The only case cited for this public policy is a 1992 district court decision from the Eastern District of Virginia, which the exceptionality opinion misidentifies as the Eastern District of California. *Id.*

the presumption of validity is never weakened. *Microsoft*, 564 U.S. at 98 (“In the nearly 30 years since *American Hoist*, the Federal Circuit has never wavered in this interpretation of § 282”); *ACS Hosp.*, 732 F.2d at 1574-75 (“The presumption is never annihilated, destroyed, or even weakened, regardless of what facts are of record”).

Contrary to these governing standards, the court's abandonment of the presumption of validity that stemmed from the vacated *Menusoft* judgment, cascaded and expanded as the litigation progressed. Starting from claims of the three patents in *Menusoft*—that the PTAB expressly distinguished from ’077 claims—the district court placed the different claims asserted against Domino’s under that same cloud. The exceptionality ruling expanded that conflation of claims even further. It described the summary judgment as invalidating *the patent*, not just the individual claims to which it was limited. And, again speaking of the entire ’077 patent, the district court stated that this Court had “affirmed,” but it did not mention that this Court vacated-in-part and mandated that claims 4 and 5 be removed from the judgment. Appx4-5. The incorrect, yet expanding, denial of the presumption of validity affects not only the exceptionality ruling. It has important ramifications for the companion appeals in Nos. 2022-1655, *et al.*, involving claims that had never before been invalidated.

a. The '077 Claims Asserted against Domino's Were Not Involved in the *Menusoft* Verdict and Were Presumed Valid

Governing precedents demonstrate why the district court's reasoning and inferences about *Menusoft* are reversible error. *Menusoft* did not involve the '077 patent; it involved patents that Ameranth unilaterally dropped from this case after *Apple*; and it did not involve §101 eligibility. So even if the *Menusoft* jury verdict had not been vacated, it would not have affected the Domino's case. Indeed, Ameranth submitted the *Menusoft* verdict and associated prior art during prosecution of the '077 patent and the PTO still issued the '077 patent after considering it. Appx400-403.

In any event, the *Menusoft* judgment *was* vacated (over the amicus objections of two defendants in the consolidated S.D. Cal. case) and it was legal error to even be considered here. And the vacatur was not a unilateral act by Ameranth; it was confirmed by three judges (including Judge Sabraw). Far from a factor supporting §285 sanctions, the vacatur is something upon which Ameranth should be able to rely in good faith. The vacatur was judicial permission to nullify the verdict so that the merits of the '850 and '325 patent claims could be adjudicated elsewhere. *United States v. Munsingwear*, 340 U.S. 36, 40 (1950); *see also Rumsfeld v. Freedom NY*, 329 F.3d 1320, 1332 (Fed. Cir. 2003) ("(A) vacated judgment has no preclusive force either as a matter of collateral or direct estoppel

or as a matter of the law of the case") (citations omitted); *Energy Heating, LLC v. Heat On-The-Fly, LLC*, 15 F.4th 1378, 1383 (Fed. Cir. 2021). Again, a party should not be penalized for pursuing claims it was permitted to litigate. *Munchkin*, 960 F.3d at 1381.

b. Sanctioning Ameranth For Its Good Faith Participation In This Court's Mandatory Mediation Program In *Menusoft* Was Error

As this Court has long stated and other courts have endorsed, mediation is a critical and favored aspect of the litigation process: mediators “serve a vital role in our litigation process. Courts depend heavily on the availability of the mediation process to help resolve disputes.” *CEATS, Inc. v. Cont'l Airlines, Inc.*, 755 F.3d 1356, 1362 (Fed. Cir. 2014).⁸

For the district court to find this case exceptional based on Ameranth's good faith participation in the Appellate Mediation Program which led to a settlement is particularly alarming. The district court concluded that, by agreeing to the *Menusoft* settlement, along with the thrice-approved vacatur, a perpetual cloud (a virtual presumption of *invalidity*) was cast over *all* claims of *all* other Ameranth

⁸ “The public interest would be served by acknowledging the efficacy of the Federal Circuit's mandatory mediation program in which the parties participated, thereby encouraging future dispute resolution by means less costly of private and public resources than full-blown litigation.” *HR Tech., Inc. v. Imura Int'l U.S.A., Inc.*, No. 08-2220-JWL, 2014 WL 524661 at *3 (D. Kan. Feb. 10, 2014).

patents. The exceptionality ruling viewed the entirety of Ameranth’s patent enforcement effort through this occluded prism. This unfounded and unwarranted conclusion, that the court weighed heavily in favor of fee-shifting, not only lacks factual support, but is in direct conflict with the foundational premise of patent law that each surviving claim of each patent continues to have the presumption of validity. Menusoft’s willingness to forgo defending the jury verdict on appeal, and to take a license with a substantial commitment to pay SETTLEMENT TERM for the life of the patents (which continues today) confirms the reasonableness of Ameranth’s continued enforcement. If successful settlements—achieved in mandatory mediation conducted under the Court’s auspices—can be used to support monetary sanctions, that would be a powerful blow against the programs that exist in every federal court.

c. The Pizza Hut Settlement is Objective Evidence of the Reasonableness of Ameranth’s Continued Enforcement of the ‘077 Claims

As to Pizza Hut, when the eve-of-trial settlement was reached, the claims of the ‘077 patent were still entitled to the presumption of validity flowing from the string of consistent favorable actions by the PTO (issuing the ‘077 claims over the prior art and verdict in *Menusoft*) and the PTAB (in denying, with reasoned support, every petition seeking review of the ‘077 claims’ validity). Rather than wait to see the outcome of either its district court motion or a trial, Pizza Hut

settled and [REDACTED] a [REDACTED] AMOUNT.

Devoid of record support is the district court’s statement that Ameranth reached a settlement with Pizza Hut “pending dismissal.” *See* Appx5, Appx20. The parties had no such knowledge. Other than a hearing on Pizza Hut’s motion, the only thing “pending” at the time of settlement was *trial* on the schedule Judge Sabraw set. The imminence of trial, state of §101 law, and the prior uniform PTAB decisions rejecting invalidity claims, all made Pizza Hut the party with more reason to fear an adverse ruling on its motion. It was clear error for the district court to infer otherwise. And as to the “timing” of the settlement being “troubling” to the court (Appx20), the successful *Pizza Hut* mediation was mandated on a date the court itself chose. Appx9789.

How, then, could the court find the timing of settlement “troubling”? How is a reasonable patent litigant supposed to respond to an offer to settle for the [REDACTED]? Not settle? If, as the district court’s opinion concludes, court-mandated settlement conferences that succeed just prior to trial heavily favor an “exceptional case” finding, what could a reasonable litigant do?

It is inconceivable that a court-mandated mediation that results in a settlement where the defendant obtains a [REDACTED] and the patent holder obtains a [REDACTED] in return, could ever weigh in favor of an exceptional case finding. Such a result undermines every public policy consideration, every court

rule, every interest in promoting compromises of disputes.

Under governing legal standards and the record, the district court's inferences and comparison of this case to *Kindred Studio Illustration & Design, LLC v. Elec. Commc'n Tech., LLC*, No. 2:18-CV-07661 (GJS), 2019 WL 3064112, at *4 (C.D. Cal. May 23, 2019) ("*Kindred*") is error. *See* Appx12.

First, the court is mistaken in saying that Ameranth's late-stage settlement of '077 claims with Pizza Hut followed a series of "losses." *See* Appx20-21. The '077 claims had suffered no losses. Ameranth successfully repelled every one of defendants' many attacks.

Second, the record provides no support for the district court's treatment of the *Pizza Hut* settlement as "nuisance value" and made to avoid adjudication. Without knowledge of the settlement amount the district court had no basis for conjecture and adverse inferences about Ameranth's motives. With Domino's bearing the burden of proving its entitlement to §285 relief, the absence of evidence on the [REDACTED] should have precluded such adverse inferences. In stark contrast, the *Kindred* court had actual knowledge of the nominal nature of the many settlements. Once the confidential amount of Pizza Hut settlement was disclosed to the court, the rationale for an adverse inference evaporated. Yet, even after Ameranth provided that information on reconsideration, the court left its opinion unchanged. Appx2444-2446.

Third, the court’s view of the “totality of circumstances” ignores that Ameranth had 47 licensees to the ‘077 patent over the time period that the Domino’s case lasted. Appx2275-2280. And *Menusoft* and *Pizza Hut* were settled with sophisticated companies making business decisions to [REDACTED] [REDACTED] for [REDACTED]. Appx2270-2271, Appx1364-1387. This supports a reasonable assumption of patent validity. *PersonalWeb Techs. v. EMC Corp.*, No. 5:13-cv-01358-EJD, 2020 WL 3639676 at *9 (N.D. Cal. July 6, 2020) (“Moreover, the True Name patents have been licensed dozens of times over a fifteen-year period, which demonstrates that others consider the patents to be valid.”). That, too, is unlike *Kindred*.

In addition, the *Kindred* court considered factors not present here:

- *Kindred* found that “no reasonable patentee would assert the [alleged claims] against an alleged infringer.” *Kindred*, 2019 WL 3064112, at *4. The court here found no similar issue of clear non-infringement. *See* Appx17.
- The plaintiff in *Kindred* pressed generic, “nuisance value” (paid-up license fees in the range of \$10,000 - \$15,000) demand letters on defendants in several jurisdictions. *Kindred*, 2019 WL 3064112, at *5. But here, there were no nominal “nuisance value” demands or licenses.
- The *Kindred* plaintiff filed over 500 lawsuits and never took a case through the litigation process, not even to the *Markman* stage. *Id.* at *5-6 (“ECT

has asserted 27 of those patents a total of 875 times without . . . ever taking a single case to a merits determination”). Here, Ameranth litigated many key legal issues through resolution at the PTAB, the district court, and this Court, up to trial.

The district court’s subjective characterization of Ameranth as a patent troll like ECT is incorrect and not supported by the record. Ameranth developed award-winning technology, sought and obtained patent protection for that technology, and made and sold products practicing the technology. Appx339-341; Appx2419. There is no evidence that Ameranth brought this case against Domino’s in bad faith or that the claims were “objectively baseless.”

4. The District Court’s Reliance on Undecided Factual Disputes, and Late-Stage Unresolved Non-Infringement Contentions Cannot Support an “Exceptional Case” Determination

In finding this case exceptional, the district court incorrectly relied on its after-the-fact perception that Ameranth’s infringement position, involving factual issues that were never resolved by trial or summary judgment, was “weak.” Appx10 at 15. But when evaluating an argument for determining exceptionality, “the focus must be on arguments that were frivolous or made in bad faith.” *Stragent, LLC v. Intel Corp.*, No. 6:11-CV-421, 2014 WL 6756304, at *4 (E.D. Tex. Aug. 6, 2014) (Dyk, J., sitting by designation). The district court did not find that Ameranth’s position was baseless or brought in bad faith.

Courts must begin with a presumption of good faith: “We have held

that there is a presumption that an assertion of infringement of a duly granted patent is made in good faith.” *Medtronic*, 603 F.3d at 954; *Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 999 (Fed. Cir. 2003)); *see also Checkpoint Sys.*, 858 F.3d at 1376 (discussing the existence of a "presumption that an assertion of infringement of a duly granted patent is made in good faith") (internal quotation marks and citation omitted).

In fact, here, many defendants filed motions to strike Ameranth’s infringement contentions, yet none of Ameranth’s infringement contentions were stricken by the court. By definition, Ameranth’s contentions were reasonable.

In seeking an exceptional case determination, Domino’s presented a “kitchen sink” of disputed facts, attacking purported positions it attributed to Ameranth, none of which were adjudicated. *See Stragent*, 2014 WL 6756304, at *6 (totality of circumstances is not an “invitation to a ‘kitchen sink’ approach where the prevailing party questions each argument and action of the losing party in an effort to secure attorney’s fees”).

The district court expressly rejected each of Domino’s contentions:

- On Ameranth’s conduct during discovery, the court concluded that
“this allegation does not support an exceptional case finding.”
 Appx14 at 16-20 (emphasis added).

- Domino’s attack concerning the issues of scrolling and source code was rejected because Ameranth’s conduct “*was not necessarily unreasonable.*” Appx18 at 23 (emphasis added).
- Domino’s contention that Ameranth provided inconsistent testimony related to the TransPad was rejected because “inconsistent testimony, standing alone, *does not make this an exceptional case.*” Appx14 at 19-20 (emphasis added).

Unadjudicated issues are irrelevant for §285 determinations. Absent resolution, the court lacks a proper frame of reference for assessing the relative strength or weakness of the parties’ positions. The §285 process is not a *post hoc* opportunity to litigate factual disputes that were unnecessary for final judgment and could only be decided at trial.

Domino’s contentions run into these insurmountable barriers. All of the contested factual and credibility issues it raised were never before a jury. *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986) (“Credibility determinations, the weighing of the evidence, and the drawing of legitimate inferences from the facts are jury functions....”).

Although the district court correctly rejected each of Domino’s “issues” as a basis for exceptionality, it erred in its eventual decision to give them weight, favoring Domino’s in assessing the totality of the circumstances. *See* Appx18 at

17-26. By giving those issues weight, the district court abused its discretion and committed error for the reasons this Court explained in *Large Audience*, 660 Fed.Appx. at 971.

The same shortcomings should have precluded the court from crediting Domino's contention that a claim construction argument on "synchronization" was "known" from the beginning of the case in 2011. *See* Appx8-9. Domino's contention is false; Ameranth pointed out that this non-infringement argument was "new" and introduced for the first time in June 2018. Appx767.

This new argument, erroneously credited in the court's §285 analysis, isolates the claim term "synchronization." But the term "synchronization" was never in dispute; the disputed term in the claims was "master menu." *See* Appx9777. Relying on this new construction theory, Domino's contended that it had never infringed; that Ameranth knew it; and that Ameranth took inconsistent positions. Adopting Domino's view, the district court stated that "Ameranth does not address" Domino's contention that the "publicly available online ordering system for their more than 5,000 stores would have revealed" there was no infringement. Appx8 at 28.

But Ameranth explicitly addressed—and disputed—Domino's "5000 store" claims construction definition as nonsensical:

Domino's asks the Court to adopt a *nonsensical construction* for synchronization that Domino's first

introduced in June 2018 that would require any handheld customer *to be offered the entirety of all 5000+ store menus nationwide*. No person of ordinary skill in the art would consider that *rational/practical*. (Shamos Decl. ¶¶ 21-28, NOL Ex. 24.) Ordering pizza from a store in Maine, for delivery to one's home in San Diego is a nonsensical concept...

Appx767-768 (emphasis added).

The '077 claims reflect that the claimed "master menu" of the selected store must be synchronized with the customer's smart phone and/or web page menu. No POSA, including Domino's own expert, could or did accept Domino's contrived, non-infringing claim construction.⁹

But this new claim construction dispute was never resolved. The district court had called for supplementary claim construction. Appx9777. Domino's admitted the dispute "*needs to be resolved by the Court.*" Appx769 (emphasis added); see *Thermolife*, 922 F.3d at 1357 ("To be sure, due process and other procedural rights must be respected in deciding the exceptional-case question as a precondition to awarding fees against a losing party...And more process may well be needed on a fees motion when the issue presented as a basis for fees has not previously been litigated" (internal citations omitted)). In giving any weight to

⁹ Domino's expert, Stephen Gray, presented "non infringing alternatives," yet never mentioned this newly-contrived "synchronization" claim construction, non-infringement theory. Domino's expert, instead, agreed with Ameranth's constructions by relying on a single-store-based prior art reference to allege obviousness. Appx768.

Domino's contentions on this subject, the district court erred.

C. Even If This Case Was Properly Deemed “Exceptional,” the District Court Committed Reversible Error In Quantifying Attorney’s Fees

The \$2,786,185.29 award of full attorneys’ fees and costs is unsupportable.

Appx26-31.

1. The District Court Failed to Explain the Relationship Between its Exceptionality Findings and the Amount Awarded

Attorney fees under §285 are compensatory, not punitive. *In re Rembrandt Technologies LP Patent Litigation*, 899 F.3d 1254, 1278 (Fed. Cir. 2018) (citing *Cent. Soya Co. v. Geo. A. Hormel & Co.*, 723 F.2d 1573, 1578 (Fed. Cir. 1983)). In such a “statutory sanction regime[],” a “fee award may go no further than to redress the wronged party ‘for losses sustained’; it may not impose an additional amount as punishment for the sanctioned party's misbehavior.” *Goodyear Tire & Rubber Co. v. Haeger*, 137 S. Ct. 1178, 1186 (2017). Moreover, deterrence “is not an appropriate consideration in determining the *amount* of a reasonable attorney fee.” *Lumen View Tech. LLC v. Findthebest.com, Inc.*, 811 F.3d 479, 484-85 (Fed. Cir. 2016) (emphasis in original).

As such, “the amount of the award must bear some relation to the extent of the misconduct,” and the district court “must explain that relationship, at least to the extent practicable.” *Rembrandt*, 899 F.3d at 1278 (quoting *Rambus Inc. v.*

Infineon Techs. AG, 318 F.3d 1081, 1106 (Fed. Cir. 2003)); *see also Industrial Print Technologies, LLC v. Cenveo, Inc.*, 2020 WL 50507738, at *1 (N.D. Texas Aug. 26, 2020) (“In the context of a patent case and an award of fees under 285, this rule dictates that the court only award attorneys’ fees ‘caused by the conduct that renders the case exceptional.’”); *Effective Expl., LLC v. BlueStone Nat. Res. II, LLC*, 2018 WL 466246, at *3 (E.D. Tex. Jan. 18, 2018) (same).

Here, the district court’s exceptionality order identified three separate bases that, in its view, triggered “serious questions and concerns about Ameranth’s litigation conduct and strategy.” Appx18 at 25-26.

First, the district court took issue with Ameranth’s “ambitious strategy” of filing more than forty cases, which “complicated the litigation and slowed its progress,” despite acknowledging “Ameranth does not bear complete responsibility for the delay in resolving these cases.” Appx19 at 1-2, Appx19 at 9-10 and Appx20 at 3-5. The court did not account for the fact that Ameranth’s 47 licenses confirm the widespread use of its inventions.

Next, the district court attacked Ameranth’s settlement with Pizza Hut, stating that “although there may have been many reasons for the parties’ decision to settle” (which, of course, there were, *supra* at 46), but that “the timing of the settlement and Ameranth’s attempt thereafter to avoid a prompt ruling on the 101 issues, is ‘troubling.’” Appx20 at 11-15 (citation omitted).

Finally, the district court found that “Ameranth’s overall litigation conduct,” was an additional reason for declaring the case exceptional. Appx20 at 21, Appx21 at 4-6.

But other than these conclusory references to its incorrectly limited view of the “totality of the circumstances,” and its stated desire to employ a “holistic approach” to fee-shifting, the district court’s fees order failed to identify a causal connection between any finding of litigation misconduct and the years of fees it awarded. *See* Appx28 at 21-23, Appx29 at 1-3. The court never determined that the conduct it criticizes was pervasive enough to affect the entire litigation. *See, e.g., Rembrandt*, 899 F.3d at 1279 (“...none of the district court’s language implies that it thought the specific instances of misconduct above bore the kind of relation to the overall litigation contemplated by *Goodyear* or *Rambus*.”); *cf. Monolithic Power Systems, Inc. v. O2 Micro International Ltd.*, 726 F.3d 1359, 1369 (Fed. Cir. 2013) (upholding a full award of attorney fees against a party because “(the party’s) rampant misconduct so severely affected every stage of the litigation that a full award of attorney fees was proper.”)

Here, the district court’s own findings show otherwise. *See Rembrandt*, 899 F.3d at 1279. The district court rejected all of Domino’s arguments that any of Ameranth’s specific actions during the litigation was unreasonable. *See, e.g.,* Appx13 at 23-24, Appx14 at 9-11, Appx15 at 16-18. Despite its ultimate

conclusion that Ameranth’s conduct, coupled with the perceived “weakness” of the claims, rendered the case exceptional, earlier in its order, the district court had rejected the idea that Ameranth’s vigorous prosecution was itself a basis for exceptionality: “the filing of all these cases, in and of itself does not make Ameranth a vexatious litigant... Thus, contrary to the suggestion of the Domino’s Defendants, the mere existence of other lawsuits filed by Ameranth, without more ‘does not mandate negative inferences about the merits or purpose of this suit.’” Appx16 at 14-23, Appx17 at 1-6 (citations omitted).

These findings collectively eliminate any justification for a full fee award—particularly where there was no attempt by the district court to assess which litigated issues the claimed misconduct ultimately affected. *See Rembrandt*, 899 F.3d at 1280 (“What the district court did here—award all fees with no explanation whatsoever of such a causal connection—was not enough.”).

Of critical importance, which the court completely ignored in both its “exceptional case” finding and subsequent award of “holistic” fees, is the chilling effect that such a finding and award would have on the basic right to fully litigate unsettled §101 law, including appeals to this Court. *Gust*, 905 F.3d at 1329 (rejecting as “simply incorrect” the contention “that because all abstract idea cases after *Alice* applied the two-step *Alice/Mayo* framework, patent eligibility after *Alice* was settled”). This is particularly applicable here, where the only two

authorities to address the §101 eligibility of the ‘077 claims—the PTAB and the district court—disagreed.

2. The District Court Abused Its Discretion When It Failed To Quantify Fees Based on the Temporal Limitations In Its Exceptionality Order

Having failed to anchor its excessive fee award to any purported misconduct, the district court is left with the other basis for exceptionality—the substantive strength of Ameranth’s litigation position. To the extent this Court accepts the designation of this case as “exceptional”—which it should not—the district court nonetheless erred by failing to correlate the fee award with any of the points in time at which it suggested Ameranth should have ceased all efforts to enforce the ‘077 patent. When did Ameranth cross the ‘077 Rubicon?

The district court refused to apportion the fees by selecting a defensible timeframe. Instead, the court opted for an unapportioned “holistic approach”—for the entire case from its inception—based on a “number of factors.” Appx 28 at 12-15, Appx28 at 20-23, Appx29 at 1-3.

The award of fees for only portions of cases or with temporal limitations is a well-accepted practice. This Court has repeatedly affirmed partial awards that align with the circumstances giving rise to exceptionality. *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372 (Fed. Cir. 2017), affirmed a partial award in light of the patentee’s failure to reassess its case in the wake of *Alice*—an

award that was confined only to fees accrued after the *Alice* decision issued. *Id.* at 1380.

Likewise, *National Oilwell Varco, L.P. v. Omron Oilfield & Marine, Inc.*, 676 Fed.Appx.967 (Fed. Cir. 2017), affirmed a partial award of fees accrued after the plaintiff refused to produce a potentially dispositive document on standing. While the district court did not find the initial filing of the lawsuit or infringement positions exceptional, it did find unreasonable plaintiff's refusal to produce the requested document and the maintenance of the lawsuit once the lack of standing became clear. *Id.* at 972. This Court agreed, finding "no abuse of discretion in how the district court chose to calibrate the period of the litigation for which Omron was entitled to be awarded its attorney fees." *Id.* at 973.

District courts routinely apportion fees in similar circumstances. *See, e.g., Soar Tools, LLC v. Mesquite Oil Tools, Inc.*, No. 5:19-CV-243-H, 2022 WL 1447946, at *12 (N.D. Tex. Feb. 9, 2022) ("Based on Soar's unreasonable litigation conduct prior to the first dismissal, the Court tailors the fee award to only include fees incurred by Mesquite prior to the first order of dismissal."); *NetSoc, LLC v. Chegg Inc.*, No. 18-CV 10262 (RA), 2020 WL 7264162, at *6 (S.D. N.Y. December 10, 2020) (limiting time period for fee award "only after" party put on notice of error in filing).

Ameranth had a statutory right to have all claims of the ‘077 patent continued to be presumed valid until the district court’s summary judgment decision on September 25, 2018. In a similar context, the district court in Delaware appropriately apportioned fees for the period after a case-dispositive summary judgment motion was resolved. *Wi-LAN Inc. v. Sharp Electronics Corporation*, No. 15-379-LPS, 2022 WL 1224901, at *2-3 (D. Del. April 25, 2022) (tailoring partial fee award from point at which patentee faced an “insurmountable” failure of proof through summary judgment loss).

Here, the district court did not identify a time at which Ameranth’s enforcement actions became “unreasonable,” to allocate the attorney’s fees and costs accordingly. This is particularly relevant given that the court found that the cases were filed “in good faith” (*see* Appx8 at 7-8), and failed to address and credit the continued presumption of validity of the ‘077 patent claims up to the 2018 summary judgment.

Finally, no fees should have been awarded for the PTAB proceedings, especially because Ameranth prevailed on every ‘077 CBM. *Dragon Intellectual Prop., LLC v. Dish Network LLC*, 956 F.3d 1358, 1362 (Fed. Cir. 2020) (“[W]e see no basis in the Patent Act for awarding fees under §285 for work incurred in *inter partes* review proceedings that the Appellants voluntarily undertook.”).

The fee award cannot be justified and must be reversed.

VII. CONCLUSION

The district court's decisions finding this case exceptional and its award of fees under §285 should be reversed. Ameranth respectfully requests that this case be heard on the same day and before the same panel as companion Appeals 2022-1655, *et al.*

Respectfully submitted,

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December 20, 2022

ADDENDUM

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8 **UNITED STATES DISTRICT COURT**
9 **SOUTHERN DISTRICT OF CALIFORNIA**

10 AMERANTH, INC.,

11 Plaintiff,

12 v.

13 DOMINO'S PIZZA, INC. and
14 DOMINO'S PIZZA, LLC

15 Defendants.
16
17

Case No.: 12cv0733 DMS (WVG)

**ORDER GRANTING IN PART
DEFENDANTS' SECOND
RENEWED MOTION TO DECLARE
CASE EXCEPTIONAL AND
AWARD ATTORNEY FEES AND
NON-TAXABLE COSTS**

18 This case comes before the Court on Defendants Domino's Pizza, LLC and
19 Domino's Pizza, Inc.'s second renewed motion to declare this case exceptional and award
20 attorney fees and non-taxable costs under 35 U.S.C. § 285. The original motion was filed
21 after this Court found Ameranth's U.S. Patent No. 8,146,077 ("the '077 Patent")
22 unpatentable under 35 U.S.C. § 101, and after Ameranth filed an appeal of that Order. In
23 light of Ameranth's appeal, the Court denied the original motion without prejudice. After
24 the Federal Circuit affirmed this Court's unpatentability finding, the Domino's Defendants
25 renewed their motion. Before briefing was completed on the renewed motion, Ameranth
26 filed a petition for certiorari with the United States Supreme Court. After the Court denied
27 that petition, the Domino's Defendants withdrew their renewed motion and filed the

28 ///

1 present motion. The Court has now reviewed the briefs, the record and the relevant legal
2 authority, and grants the motion in part for the reasons set out below.

3 **I.**

4 **BACKGROUND**

5 This case is one of forty-three patent infringement cases that Ameranth has filed in
6 this Court.¹ The first case, *Ameranth, Inc. v. Pizza Hut, Inc.*, Case No. 11cv1810, was filed
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8

9
10 ¹ The full list of cases is as follows: *Ameranth, Inc. v. Pizza Hut, Inc.*, Case No. 11cv1810,
11 *Ameranth, Inc. v. Papa John's USA, Inc.*, Case No. 12cv0729, *Ameranth, Inc. v. Seamless*
12 *North America, LLC*, Case No. 12cv0737, *Ameranth, Inc. v. TicketMob, LLC*, Case No.
13 12cv0738, *Ameranth, Inc. v. GrubHub, Inc.*, Case No. 12cv0739, *Ameranth, Inc. v. Pizza*
14 *Hut, Inc.*, Case No. 12cv0742, *Ameranth, Inc. v. OpenTable, Inc.*, Case No. 12cv0731,
15 *Ameranth, Inc. v. O-Web Techs., Ltd.*, Case No. 12cv0732, *Ameranth, Inc. v. Domino's*
16 *Pizza, LLC*, Case No. 12cv0733, *Ameranth, Inc. v. Agilsys, Inc.*, Case No. 12cv0858,
17 *Ameranth, Inc. v. ChowNow, LLC*, Case No. 12cv1201, *Ameranth, Inc. v. ATX Innovation,*
18 *Inc.*, Case No. 12cv1656, *Ameranth, Inc. v. EMN8, Inc.*, Case No. 12cv1659, *Ameranth,*
19 *Inc. v. Starwood Hotels and Resorts Worldwide, Inc.*, Case No. 12cv1629, *Ameranth, Inc.*
20 *v. Micros Systems, Inc.*, Case No. 12cv1655, *Ameranth, Inc. v. Hyatt Hotels Corp.*, Case
21 No. 12cv1627, *Ameranth, Inc. v. Best Western Int'l, Inc.*, Case No. 12cv1630, *Ameranth,*
22 *Inc. v. Marriott Int'l, Inc.*, Case No. 12cv1631, *Ameranth, Inc. v. Hotel Tonight, Inc.*, Case
23 No. 12cv1633, *Ameranth, Inc. v. Hotels.com, LP*, Case No. 12cv1634, *Ameranth, Inc. v.*
24 *Expedia, Inc.*, Case No. 12cv1654, *Ameranth, Inc. v. Kayak Software Corp.*, Case No.
25 12cv1640, *Ameranth, Inc. v. EMN8, Inc.*, Case No. 12cv1659, *Ameranth, Inc. v. Mobo*
26 *Systems, Inc.*, Case No. 12cv1642, *Ameranth, Inc. v. NAAMA Networks, Inc.*, Case No.
27 12cv1643, *Ameranth, Inc. v. Orbitz, LLC*, Case No. 12cv1644, *Ameranth, Inc. v.*
28 *Subtledata, Inc.*, Case No. 12cv1647, *Ameranth, Inc. v. Stubhub, Inc.*, Case No. 12cv1646,
Ameranth, Inc. v. Ticketmasters, LLC, Case No. 12cv1648, *Ameranth, Inc. v.*
Travelocity.com, LP, Case No. 12cv1649, *Ameranth, Inc. v. Fandango, Inc.*, Case No.
12cv1651, *Ameranth, Inc. v. Hotwire, Inc.*, Case No. 12cv1653, *Ameranth, Inc. v.*
Wanderspot LLC, Case No. 12cv1652, *Ameranth, Inc. v. Usablenet, Inc.*, Case No.
12cv1650, *Ameranth, Inc. v. Hilton Resorts Corp.*, Case No. 12cv1636, *Ameranth, Inc. v.*
Ticketbiscuit, LLC, Case No. 13cv0352, *Ameranth, Inc. v. Ticketfly, Inc.*, Case No.
13cv0353, *Ameranth, Inc. v. Eventbrite, Inc.*, Case No. 13cv0350, *Ameranth, Inc. v.*
MonkeyMedia Software Inc., Case No. 13cv0836, *Ameranth, Inc. v. Starbucks Corp.*, Case
No. 13cv1072, *Ameranth, Inc. v. Domino's Pizza, LLC*, Case No. 13cv1520, *Ameranth,*
Inc. v. Fandango, Inc., Case No. 13cv1525, *Ameranth, Inc. v. Opentable, Inc.*, Case No.

1 on August 15, 2011, and originally named nine Defendants: Pizza Hut, Inc., Pizza Hut of
2 America, Inc., Domino's Pizza, LLC, Domino's Pizza, Inc., Papa John's USA, Inc.,
3 Opentable, Inc., Grubhub, Inc., Netwaiter, LLC and Laughstub LLC. In a First Amended
4 Complaint filed on September 13, 2011, Ameranth renamed the first eight Defendants from
5 the original Complaint, dropped Defendant Laughstub, and added five additional
6 Defendants: Ticketmob, LLC, Exit 41, LLC, Quikorder, Inc., Seamless North America,
7 LLC and O-Web Technologies, Ltd. Ameranth filed a Second Amended Complaint on
8 December 6, 2011, renaming all Defendants from the First Amended Complaint except
9 Netwaiter. In each of these Complaints, Ameranth alleged the Defendants were infringing
10 its United States Patents Nos. 6,384,850 ("the '850 Patent") and 6,871,325 ("the '325
11 Patent").

12 That case was not the first case Ameranth filed alleging infringement of the '850 and
13 '325 Patents. The first case was *Ameranth v. Menusoft Systems Corp.*, Case No. 07cv0271,
14 which was filed in the United States District Court for the Eastern District of Texas. In
15 that case, Ameranth alleged defendants Menusoft and Cash Register Sales & Service of
16 Houston, Inc. were infringing the '850 and '325 Patents, as well as a third Ameranth Patent,
17 U.S. Patent No. 6,982,733 ("the '733 Patent"). That case was litigated for over three years,
18 and eventually tried to a jury. At the conclusion of the trial, the jury returned verdicts of
19 non-infringement for each defendant on all patent claims asserted,² and found those same
20 patent claims were invalid as anticipated and obvious.

21 On June 23, 2011, Ameranth appealed that judgment. In October 2011, after Case
22 No. 11cv1810 was filed in this Court, the parties in the *Menusoft* case reached a settlement.
23 *Menusoft*, ECF No. 331 at 1-2. Pursuant to that settlement, the parties filed a joint motion
24

25
26 13cv1840. Ameranth has also filed other patent infringement cases in this Court on other
27 patents, but those cases are not part of this litigation.

28 ² The claims submitted to the jury were claims 1 and 4 of the '850 Patent, claims 6, 9, and
10 of the '325 Patent, and claims 1 and 3 of the '733 Patent.

1 for indicative ruling with the district court on a request to vacate the jury's invalidity
2 verdicts. *Id.* The district court granted that motion, and indicated that if the Federal Circuit
3 remanded the case for consideration of such a request, the court would grant that motion.
4 *Menusoft*, ECF No. 332. Thereafter, two third-parties to that case, Profitstreams, LLC and
5 Seamless (one of the Defendants in Case No. 11cv1810), filed motions for leave to file
6 amicus briefs on the court's indicative ruling. *Menusoft*, ECF Nos. 333, 334. In each of
7 those briefs, the parties informed the court that they were involved in litigation with
8 Ameranth over the '850 and '325 Patents, and that the *Profitstreams* case involved the
9 same claims adjudged to be invalid in *Menusoft*. For those reasons and others, amici urged
10 the court to reconsider its indicative ruling and/or deny the anticipated motion for vacatur.
11 Meanwhile, the *Menusoft* parties proceeded to file a motion to remand the appeal, which
12 was granted, and then filed their joint motion to vacate the invalidity verdicts and judgment.
13 *Menusoft*, ECF No. 348. After considering the amicus briefs and the joint motion, the court
14 confirmed its indicative ruling, granted the motion, and vacated the invalidity verdicts and
15 judgment. *Menusoft*, ECF No. 355.

16 The invalidity findings having been lifted, and following passage of the America
17 Invents Act, *see* 35 U.S.C. § 299, Ameranth began filing additional cases in this Court. As
18 to Defendants named in Case No. 11cv1810, Ameranth filed additional cases against some
19 of them alleging infringement of the '077 Patent. Ameranth also filed other cases against
20 new defendants alleging infringement of the '850, '325 and '077 Patents. Ameranth then
21 filed another series of cases alleging infringement of the '733 Patent, either alone or in
22 combination with the previously asserted patents.

23 In October 2013, after nearly all of the individual cases were filed and discovery had
24 commenced, a majority of Defendants filed petitions with the Patent Trial and Appeal
25 Board ("PTAB") seeking review of the '850, '325 and '733 Patents under the Transitional
26 Program for Covered Business Method ("CBM") Patents. This Court stayed the litigation
27 pending those proceedings. The PTAB instituted review on all three petitions, and it found
28 certain claims of those Patents unpatentable under 35 U.S.C. § 101. On appeal, the Federal

1 Circuit affirmed the PTAB's determinations of unpatentability, and reversed the PTAB's
2 determinations that the other claims were patentable. *Apple, Inc. v. Ameranth, Inc.*, 842
3 F.3d 1229, 1245 (Fed. Cir. 2016). Specifically, the Federal Circuit found all instituted
4 claims of the '850, '325 and '733 Patents unpatentable under § 101. *Id.*

5 In light of the Federal Circuit's decision, the only remaining patent in this litigation
6 was the '077 Patent. Various Defendants twice petitioned the PTAB for CBM review of
7 the '077 Patent, but both of those petitions were unsuccessful.

8 With Defendants having exhausted their available remedies at the PTAB and
9 Ameranth having exhausted its appeals of those decisions, litigation in this Court
10 recommenced. The parties engaged in motion practice, discovery and Markman
11 proceedings, and the Court resolved in Ameranth's favor another related case alleging a
12 claim of patent interference concerning the '077 Patent. *See IPDEV Co. v. Ameranth, Inc.*,
13 Case No. 14cv1303 DMS (WVG).

14 After the *IPDEV* case was resolved, the remaining patent infringement cases readied
15 for trial, with the "Pizza Companies and System Providers" slated to go first. However, in
16 its final round of pre-trial motions, the Pizza Hut Defendants filed a motion for summary
17 judgment of unpatentability of the '077 Patent pursuant to 35 U.S.C. § 101. That motion
18 was fully briefed and scheduled for oral argument, but three days before the hearing
19 Ameranth and the Pizza Hut Defendants settled their dispute.

20 Pending dismissal of Ameranth's case against the Pizza Hut Defendants, the
21 Domino's Defendants filed an *ex parte* motion to file a late joinder in Pizza Hut's § 101
22 motion, which the Court granted over Ameranth's objection. The motion was then reset
23 for hearing and Ameranth was provided an opportunity to file a supplemental opposition
24 to the motion, which it did. After a thorough review, the Court found the '077 Patent
25 unpatentable under § 101, and granted the motion. Ameranth appealed that ruling to the
26 Federal Circuit, which affirmed this Court's findings in an unpublished opinion. *See*
27 *Ameranth, Inc. v. Domino's Pizza, LLC*, 792 Fed. Appx. 780 (Fed. Cir. 2019). Thereafter,
28 Ameranth filed a petition for writ of certiorari with the United States Supreme Court, which

1 was denied. *See Ameranth, Inc. v. Domino's Pizza, LLC*, 141 S.Ct. 249 (2020). Following
2 that decision, the parties submitted competing proposals on how to proceed with the
3 litigation, which had been stayed again when Ameranth filed its appeal of the § 101 ruling.
4 After reviewing those proposals, the Court continued the stay pending its ruling on the
5 present motion.

6 II.

7 DISCUSSION

8 Title 35 U.S.C. § 285 provides: “The court in exceptional cases may award
9 reasonable attorney fees to the prevailing party.” 35 U.S.C. § 285. A “central aim” of this
10 statute:

11 is to prevent an alleged infringer from suffering a “gross injustice.” The injury
12 to the alleged infringer is the focus ... § 285 “is remedial and for the purpose
13 of compensating the prevailing party for the costs it incurred in the
14 prosecution or defense of a case where it would be grossly unjust ... to require
15 it to bear its own costs.” Again, it is clear that the aim of § 285 is to
compensate a defendant for attorneys’ fees it should not have been forced to
incur.

16 *Kilopass Tech., Inc. v. Sidense Corp.*, 738 F.3d 1302, 1313 (Fed. Cir. 2013) (internal
17 citation omitted).

18 Until the Supreme Court’s decision in *Octane Fitness, LLC v. Icon Health & Fitness,*
19 *Inc.*, 572 U.S. 545 (2014), a case was not exceptional unless there was misconduct during
20 the litigation or in securing the patent, or “both (1) the litigation [was] brought in
21 subjective bad faith, and (2) the litigation [was] objectively baseless.” *Id.* at 550 (quoting
22 *Brooks Furniture Mfg., Inc. v. Dutailer Int’l, Inc.*, 393 F.3d 1378, 1381 (Fed. Cir. 2005)).
23 A showing of exceptional case also was subject to the “clear and convincing evidence”
24 standard. *Id.* at 557.

25 In *Octane Fitness*, however, the Supreme Court rejected both the substantive test for
26 exceptionality and the “clear and convincing evidence” standard. The Court found the
27 substantive test was “overly rigid” and “too restrictive.” *Id.* at 555. Instead, the Court held
28 that “[d]istrict courts may determine whether a case is ‘exceptional’ in the case-by-case

1 exercise of their discretion, considering the totality of the circumstances.” *Id.* at 554. In
2 making that determination, the Court explained that an exceptional case “is simply one that
3 stands out from others with respect to the substantive strength of a party’s litigation
4 position (considering both the governing law and the facts of the case) or the unreasonable
5 manner in which the case was litigated.” *Id.* Factors relevant to those issues include,
6 “among other factors, ‘frivolousness, motivation, objective unreasonableness (both in the
7 factual and legal components of the case) and the need in particular circumstances to
8 advance considerations of compensation and deterrence.’” *Id.* at 554, n.6. Courts may also
9 consider “whether a party knew or willfully ignored evidence of the claims’ meritlessness;
10 whether the meritlessness could have been discovered by basic pretrial investigation; or
11 whether the meritlessness was made clear early in the litigation.” *Printeron, Inc. v.*
12 *BreezyPrint Corp.*, No. H-13-3025, 2015 WL 7149442, at *2 (N.D. Tex. Nov. 10, 2015).
13 On the burden of proof, the Court lowered the standard from “clear and convincing”
14 evidence to a “preponderance” of the evidence. *Octane Fitness*, 572 U.S. at 557-58.

15 Here, the Domino’s Defendants raise a number of arguments in support of their
16 request that the Court declare this case exceptional. First, the Domino’s Defendants argue
17 Ameranth’s case was baseless. Specifically, the Domino’s Defendants assert Ameranth
18 knew or should have known that the ‘850, ‘325 and ‘733 Patents were invalid based on the
19 jury verdict in *Menusoft*. The Domino’s Defendants also assert Ameranth should have
20 known, based on publicly available information, that they did not infringe the ‘077 Patent,
21 and that Ameranth should have known the ‘077 Patent was invalid under § 101 after the
22 Supreme Court’s decision in *Alice* and the Federal Circuit’s decision in *Apple*. Second, the
23 Domino’s Defendants argue Ameranth’s positions on several issues shifted during the
24 litigation, and that Ameranth misled the Court on a number of other issues.

25 **A. Substantive Strength of Litigation Position**

26 The Domino’s Defendants’ opening argument is that Ameranth’s case was baseless.
27 On the ‘850, ‘325 and ‘733 Patents, the Domino’s Defendants argue Ameranth knew or
28 should have known those Patents were invalid based on the jury verdicts in *Menusoft*.

1 Ameranth responds that the *Menusoft* jury invalidated only certain claims from those
2 Patents, none of which were asserted in this case. Ameranth asserts the remaining patent
3 claims, and specifically, the claims asserted in this case, were unaffected by the *Menusoft*
4 case, and Ameranth was entitled to rely on the general presumption of validity in pursuing
5 those claims here.

6 There is no dispute the ‘850, ‘325 and ‘733 Patents were entitled to a presumption
7 of validity when they were issued, 35 U.S.C. § 282(a), and that Ameranth was entitled to
8 rely on a presumption of good faith when it first asserted its rights in those Patents. *See*
9 *Stone Basket Innovations, LLC v. Cook Med. LLC*, 892 F.3d 1175, 1180 (Fed. Cir. 2018)
10 (stating that upon issuance of valid patent, patentee is entitled to presumption of good faith
11 in asserting its patent rights against an accused infringer). However, the *Menusoft* verdicts
12 and Ameranth’s request to vacate those verdicts raise questions about the strength of those
13 presumptions here. As stated above, some of the claims in the ‘850, ‘325 and ‘733 Patents
14 were found invalid in *Menusoft*. Although Ameranth asserted different claims here, the
15 *Menusoft* verdicts cast a cloud on the Patents, and indicated a weakness in Ameranth’s
16 position. Ameranth’s request to vacate those verdicts could be construed as an
17 acknowledgement of that weakness, and an effort to remove that cloud from this litigation
18 and other litigation on those Patents. *See Wang Labs. v. Toshiba Corp.*, 793 F.Supp. 676,
19 678 (E.D. CA 1992) (setting out public policy concerns surrounding vacatur of patent
20 invalidity findings).

21 Ameranth’s position on the ‘077 Patent is also questionable. On the issue of
22 infringement, the Domino’s Defendants argue Ameranth knew or should have known that
23 they did not infringe. Specifically, the Domino’s Defendants assert that the claims of the
24 ‘077 Patent required a “synchronous” system, and that under Ameranth’s construction of
25 that term, that meant the system had to be “consistent.” The Domino’s Defendants contend
26 that a review of their publicly available online ordering system for their more than 5,000
27 stores would have revealed that their system was not consistent, and therefore did not
28 infringe. Ameranth does not address this particular argument. Rather, it responds to a

1 different argument, namely that Ameranth took conflicting positions on the construction of
2 “synchronous,” which according to the Domino’s Defendants, supports a finding that
3 Ameranth litigated this case in an unreasonable manner.

4 On the latter issue, the Court agrees with the Domino’s Defendants that Ameranth
5 took inconsistent positions on the meaning of “synchronous.” During claim construction,
6 Ameranth proposed that “synchronous” be construed as “made, or configured to make,
7 consistent.”³ (ECF No. 865 at 12.⁴) Or as explained by Ameranth’s counsel at the
8 Markman hearing, “synchronous” or “synchronized” means “that the same information
9 provided to users via display of user interfaces is presented consistently to different client
10 devices.” (ECF No. 906 at 154.) Stated simply, the point of the invention was “to attain
11 consistency across the system[.]” (*Id.*) Ameranth maintained that position when defending
12 the ‘077 Patent in the *IPDEV* case, arguing that “synchronization” “means that the
13 information in the master menu has to be substantively the same as all of the menu items,
14 modifiers, submodifiers[,] categories that appear in the programmed handheld menu
15 configuration.” *IPDEV*, ECF No. 85 at 8. Again, “[s]ubstantively everything on the master
16 server has to have a corresponding element on the programmed handheld menu
17 configuration on the handheld. That is the synchronous element of it.” *Id.* at 9. In
18 defending against summary judgment of noninfringement, however, Ameranth changed
19 tack, and asserted the ‘077 claims did “not require that all master menu content ... be
20 synchronized in its entirety to the handheld devices.” (ECF No. 1451 at 19.) Contrary to
21 its previous position, Ameranth stated, “The claims *do not* require that there ... be ‘overall
22 consistency’ in the way Domino’s incorrectly defines it.” (*Id.* at 11.)

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26 ³ The Court notes Ameranth’s proposed construction in this case is consistent with its
27 proposed construction of a similar phrase in *Menusoft*, see *Menusoft*, ECF No. 73 at 10,
28 which construction the *Menusoft* court adopted. See *Menusoft*, ECF No. 106 at 6-8.

⁴ The ECF citation here and similar ECF citations throughout this Order refer to the docket
in Case No. 11cv1810.

1 Ameranth disputes that it took inconsistent positions on “synchronous” by raising
2 arguments about claim construction and recharacterizing its counsel’s argument during the
3 *IPDEV* hearing. (*See* Opp’n to Mot. at 22-24.) However, the claim construction arguments
4 are nothing more than red herrings, and the briefs and transcripts speak for themselves.
5 What those documents reveal to the Court is a direct inconsistency in Ameranth’s position
6 on “synchronization.” *Compare IPDEV*, ECF No. 85 at 8 (stating “synchronization”
7 “means that the information in the master menu has to be substantively the same as all of
8 the menu items, modifiers, submodifiers[,] categories that appear in the programmed
9 handheld menu configuration”) *with* ECF No. 1451 at 11 (“Critically, the claims do not
10 require that all system menu data must be synchronized with all connected devices. The
11 claims do not require that there must be ‘overall consistency’ in the way Domino’s
12 incorrectly defines it.”)

13 Applying Ameranth’s original understanding of “synchronous,” the Court agrees
14 with the Domino’s Defendants that Ameranth’s position on infringement of the ‘077 Patent
15 was weak. Ameranth identified the accused system as “Domino’s Ordering System,” not
16 the system for any individual Domino’s store. As the Domino’s Defendants point out, the
17 online menus for Domino’s stores were available to the public, and a cursory review of
18 those menus would have established that different stores have different menus. (Mem. of
19 P. & A. in Supp. of Mot. at 19.) In other words, they were not “synchronous.” Ameranth
20 disputes that ultimate conclusion, but does not dispute the facts upon which it is based,
21 which reflect the weakness of Ameranth’s position on infringement of the ‘077 Patent.

22 The Domino’s Defendants argue Ameranth’s invalidity position on the ‘077 Patent
23 was also weak after the Supreme Court’s decision in *Alice* and the Federal Circuit’s
24 decision in *Apple*. Certainly, Ameranth had a “responsibility to reassess its case in view
25 of” *Alice, Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1379 (Fed.
26 Cir. 2017) (citing *Taurus IP, LLC v. DaimlerChrysler Corp.*, 726 F.3d 1306, 1328 (Fed.
27 Cir. 2013)), and it had ample opportunity to do so. Indeed, when the *Alice* decision was
28 issued, this litigation was stayed and the parties were addressing § 101 issues before the

1 PTAB. The Federal Circuit then resolved those issues in *Apple*, finding certain claims
2 from the ‘850, ‘325 and ‘733 Patents unpatentable under § 101.

3 Ameranth argues that neither *Alice* nor *Apple* provided a basis for Ameranth to doubt
4 the validity of the ‘077 Patent, particularly because the PTAB rejected a challenge to the
5 ‘077 Patent after those decisions were issued. However, as the Domino’s Defendants point
6 out, the PTAB declined to institute review of the ‘077 Patent post-*Alice* and post-*Apple*.
7 (ECF No. 125-5, Ex. 4.) It did not, as Ameranth suggests, find the claims of the ‘077 Patent
8 “to be valid and patentable[.]” (Opp’n to Mot. at 4.) Therefore, the PTAB decisions do
9 not support Ameranth’s argument that it had a reasonable basis to believe the claims of the
10 ‘077 Patent were valid after *Alice* and *Apple*.

11 Ameranth also argues it had a reasonable basis to believe the claims of the ‘077
12 Patent were valid because Defendants did not oppose lifting the stay of this case in January
13 2017, and did not move for summary judgment at that time. It is true Defendants did not
14 oppose lifting the stay in January 2017, but that position hardly constitutes an
15 acknowledgement or concession on their part that the ‘077 Patent was valid or beyond
16 challenge. That Defendants did not file a motion for summary judgment immediately after
17 the stay was lifted is also not helpful to Ameranth. After the stay was lifted, the parties
18 had to regroup and reposition the case in light of the Federal Circuit’s finding that the ‘850,
19 ‘325 and ‘733 Patents were invalid. Given the number of Defendants involved, that took
20 time. Ameranth also filed a significant and serious motion to disqualify a member of the
21 defense counsel team as well as his law firm. (See ECF No. 629.) The parties also began
22 discovery in earnest, which led to heavy motion practice on those issues. In addition, the
23 parties had to prepare for the Markman hearing and the *IPDEV* trial. Given all of the
24 moving parts and parties in this litigation, any lag time in the filing of the § 101 motion
25 cannot reasonably be construed as an indication that Defendants thought it was unclear
26 “that [the] claims of the ‘077 Patent were ineligible.” (Opp’n to Mot. at 5.)

27 Despite Ameranth’s arguments, the Court agrees with the Domino’s Defendants that
28 Ameranth’s litigation position on the validity of the ‘077 Patent was especially weak after

1 *Alice* and *Apple*. The ‘077 Patent was part of the same family as the ‘850, ‘325 and ‘733
2 Patents, all of which were declared invalid by the Federal Circuit in *Apple*. In a case
3 presenting similar facts, the court did not hesitate to find that “no reasonable patent litigant
4 would have believed” the claims in the related patent were viable. *Kindred Studio*
5 *Illustration & Design, LLC v. Elec. Comm’n Tech., LLC*, No. 2:18-CV-07661 (GJS), 2019
6 WL 3064112, at *4 (C.D. Cal. May 23, 2019). The same may be said for Ameranth’s
7 position here. Indeed, the facts of this case are even more compelling than the facts in
8 *Kindred Studio*, where the patentee was faced with one finding of invalidity by the district
9 court. Here, Ameranth was presented with two decisions, one from the PTAB and the other
10 from the Federal Circuit, finding the ‘850, ‘325 and ‘733 Patents ineligible. Thus, the
11 reasoning of *Kindred Studio* applies with even more force here, and weighs squarely in
12 favor of an exceptional case finding.

13 **B. Manner of Litigation**

14 Turning to the second factor, the manner in which the case was litigated, the
15 Domino’s Defendants raise two arguments. First, they argue Ameranth’s positions on
16 certain issues shifted throughout the case, particularly, its positions on the terms
17 “synchronous,” “PHMC/PHC,” and the issue of scrolling. Second, the Domino’s
18 Defendants argue Ameranth misled the Court on a number of issues, specifically, Keith
19 McNally’s testimony regarding the TransPad and the destruction of Ameranth’s source
20 code, and the issue of screen counts.

21 The Court addressed the “synchronous” issue above, and thus starts its discussion
22 here with the issue of the “PHMC/PHC.” The parties’ arguments on this issue are less than
23 precise, but the Domino’s Defendants appear to argue that Ameranth took inconsistent
24 positions on whether the “PHMC/PHC” had to have information about the size of the
25 handheld device. Ameranth responds that the Court’s claim construction did not require
26 that the “PHMC/PHC” have information about the size of the handheld device, and that its
27 infringement theory was consistent with the Court’s claim construction that the

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1 “PHMC/PHC” be formatted outside the handheld device. Ameranth also argues that the
2 accused “PHMC/PHC” included formatting information, contrary to Domino’s suggestion.

3 Ameranth’s arguments, however, do not address the Domino’s Defendants’ specific
4 point, which is that Ameranth took different positions on whether the “PHMC/PHC” had
5 to contain information about the size of the handheld device. On that particular issue, the
6 record supports the Domino’s Defendants’ position that Ameranth again took inconsistent
7 positions depending on whether the issue was infringement or validity. (*Compare* ECF
8 No. 1421-7 at 7 (Ameranth’s infringement expert Sam Malek, Ph.D. stating [REDACTED]
9 [REDACTED]) with ECF No.
10 1109-19 at 3 (Ameranth’s validity expert Michael Shamos, Ph.D. agreeing that [REDACTED]
11 [REDACTED]).

12 On scrolling, the Domino’s Defendants raise a similar argument, namely that
13 Ameranth took different positions on scrolling depending on the issue at hand.
14 Specifically, in its efforts to obtain the Patent and uphold its validity, Ameranth told the
15 Patent Office and then the Federal Circuit that the invention eliminated the need for
16 scrolling. However, during claim construction in this Court, Ameranth argued the claims
17 did not preclude scrolling. Ameranth responds that its position on scrolling has been
18 consistent, namely, that the invention reduced the need for scrolling, but did not eliminate
19 scrolling entirely.

20 Unlike the “synchronous” and “PHMC/PHC” limitations discussed above, which
21 were part of the claims, scrolling, or the absence thereof, “is not claimed.” (ECF No. 1475
22 at 19.) Thus, to the extent Ameranth took inconsistent positions on this issue, it is unclear
23 what effect, if any, that had on this litigation. Given the collateral nature of this issue, the
24 Court cannot say Ameranth’s conduct here was unreasonable.

25 Next, the Domino’s Defendants argue that Ameranth’s principal Keith McNally
26 made misrepresentations in this case concerning Ameranth’s TransPad product.
27 Specifically, the Domino’s Defendants assert Mr. McNally testified during his deposition
28 in this case that Ameranth used the TransPad product during a November 1998 trade show

1 after testifying to the contrary in the *Menusoft* trial and elsewhere. Ameranth disputes that
2 Mr. McNally's testimony was inconsistent. It explains there were two versions of the
3 TransPad, and that Mr. McNally's testimony in *Menusoft* was referring to the first version
4 while his testimony in this case referred to the second version.

5 Although there does appear to be an inconsistency in Mr. McNally's testimony, that
6 inconsistency was not brought to this Court's attention prior to the present motion.
7 Furthermore, and contrary to Domino's suggestion, that testimony was not offered directly
8 to this Court. Clearly, inconsistent testimony is a cause for concern, and it should be
9 explored. However, based on the current record, the Court cannot say Mr. McNally's
10 testimony was intentionally inconsistent or that he was attempting to mislead the Court.
11 His inconsistent testimony, standing alone, does not make this an exceptional case.

12 Next, the Domino's Defendants argue Ameranth engaged in litigation misconduct
13 by withholding evidence of Ameranth's source code and then testifying, through Mr.
14 McNally, that the source code did not exist. Ameranth responds that it did not withhold
15 the source code, and that Mr. McNally's testimony was neither false nor misleading. The
16 Court finds no misconduct here. The Domino's Defendants do not dispute that Ameranth
17 produced evidence of the source code in its document productions in April 2012 and May
18 2013. That the Domino's Defendants may not have recognized that evidence until after
19 Mr. McNally's deposition does not mean Ameranth withheld it. Accordingly, this
20 allegation does not support an exceptional case finding.

21 The Domino's Defendants' next allegation of litigation misconduct concerns the
22 issue of screen counts. Specifically, the Domino's Defendants allege Ameranth submitted
23 misleading evidence in an effort to prove that they (and other Defendants) met the
24 "different number of screens" limitation. Ameranth disputes that there is any discrepancy

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1 in its evidence of screen counts, and also argues this is a factual issue that is not amenable
2 to resolution on the present motion.⁵

3 On the comparison of the iPhone 4S and the Samsung Galaxy S7, the Court agrees
4 with the Domino's Defendants that the discrepancy in the screen counts appears to be the
5 result of the new/existing customer distinction. Ameranth does not dispute this difference
6 in the ordering sequence for these two phones, or that the difference was the cause of the
7 differing screen counts. Instead, it points to a comparison of another set of phones, the
8 iPhone 5 and the Samsung Galaxy S3, to support its position that the Domino's Defendants
9 met the screen count limitation.

10 The screen counts in this latter comparison appear to be different, which would
11 support Ameranth's position on infringement, but whether Domino's meets the screen
12 count limitation is not the issue here. Rather, the issue here is whether Ameranth attempted
13 to mislead the Court with its screen count evidence. Ameranth appears to be avoiding this
14 issue by directing the Court's attention to other issues, like whether Domino's infringed
15 the Patent.⁶ It is unclear whether this is an intentional strategy on the part of Ameranth or
16 a misunderstanding of the issues. In any case, it raises concerns about Ameranth's motives.
17 Nevertheless, on the issue of screen counts, the Court cannot say the evidence reflects an
18 intent to mislead the Court as opposed to a less than precise analysis of the evidence. If
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21 ⁵ Ameranth offers a broader argument that the motion raises a number of "factually
22 intensive and credibility-based issues that were never pled or resolved." (Opp'n to Mot. at
23 2.) Ameranth argues it is improper for the Court to resolve those issues here, and that the
24 motion should be denied on that basis alone. (*Id.* at 2-3.) In support of that argument,
25 Ameranth relies on *Spineology, Inc. v. Wright Medical Technology, Inc.*, 910 F.3d 1227
(Fed. Cir. 2018). However, the Court agrees with the Domino's Defendants' interpretation
26 of that case, and their assertion that the case does not support Ameranth's argument. (*See*
27 Reply at 2.)

28 ⁶ Ameranth's responses to other arguments are similarly off point. For instance,
Ameranth's arguments concerning the TransPad were misdirected to issues of conception
and reduction to practice. Ameranth's response to the arguments about the "PHMC/PHC"
were also off base.

1 anything, the screen count evidence, and the timing of Ameranth's production of that
2 evidence, reflects a weakness in Ameranth's infringement position, not necessarily an
3 unreasonable litigation tactic.

4 The Domino's Defendants' final argument is that Ameranth is continuing "its
5 vexatious enforcement of this clearly patent-ineligible patent family to this day." (Mem of
6 P. & A. in Supp. of Mot. at 17.) In support of this argument, Domino's cites to another
7 case Ameranth filed recently against Olo, Inc. in the United States District Court for the
8 District of Delaware, alleging infringement of another patent from the '077 Patent family,
9 United States Patent No. 9,747,651 ("the '651 Patent"),⁷ and Ameranth's filing in this
10 Court indicating its intent to bring additional claims against Domino's and other
11 Defendants on two claims of the '077 Patent that remain valid, and another patent from the
12 same family, United States Patent No. 9,009,060 ("the '060 Patent"). Ameranth responds
13 that neither of these filings is evidence of vexatious litigation.

14 Clearly, Ameranth is not shy about enforcing its patent rights. Indeed, although
15 Ameranth at one point attempted to commercialize the inventions disclosed in the Patents-
16 in-Suit, its current business model appears to be focused on patent licensing rather than
17 commercializing its own products. This business strategy is evident in the number of cases
18 Ameranth has filed in courts across the country, including appeals to the Federal Circuit
19 and writs to the United States Supreme Court. However, the filing of all of these cases, in
20 and of itself, does not make Ameranth a vexatious litigant. *See Molski v. Evergreen*
21 *Dynasty Corp.*, 500 F.3d 1047, 1061 (9th Cir. 2007) (citations omitted) (emphasizing "that
22 the simple fact that a plaintiff has filed a large number of complaints, standing alone, is not
23 a basis for designating a litigant as 'vexatious.'") Rather, that determination depends on a

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26 ⁷ *See Ameranth v. Olo, Inc.*, Case No. 20cv518, United States District Court for the District
27 of Delaware. In that case, the court, relying on the Federal Circuit's decisions in *Apple* and
28 *Domino's*, found the '651 Patent unpatentable under § 101, and dismissed the case. (Mem.
of P. & A. in Supp. of Mot. at 17.) Ameranth has appealed that decision. *See Ameranth,*
Inc. v. Olo, Inc., Case No. 21-1211, United States Court of Appeals for the Federal Circuit.

1 number of factors, which the Domino's Defendants have not addressed here. *See id.* at
2 1058 (quoting *Safir v. United States Lines, Inc.*, 792 F.2d 19, 24 (2d Cir. 1986)).⁸ Thus,
3 contrary to the suggestion of the Domino's Defendants, the mere existence of other
4 lawsuits filed by Ameranth, without more, "does not mandate negative inferences about
5 the merits or purpose of this suit." *SFA Sys., LLC v. Newegg Inc.*, 793 F.3d 1344, 1351
6 (Fed. Cir. 2015).

7 What matters to this suit and this motion are the factors discussed above, and
8 considering those factors, the Court finds this to be an exceptional case. As explained
9 above, Ameranth's substantive position on the '850, '325 and '733 Patents was weak from
10 the outset. Prior to filing this case, a jury had found that certain claims from those Patents
11 were invalid as anticipated and obvious. While that case was on appeal, Ameranth
12 negotiated a settlement of that case, under which the parties agreed to jointly request that
13 the district court vacate those invalidity findings. Although the court granted that request,
14 the jury's findings in *Menusoft* should have alerted Ameranth to potential weaknesses in
15 its case on those three Patents.

16 Ameranth's position on the '077 Patent was also weak. As discussed above,
17 Ameranth had access to the Domino's Defendants' publicly available ordering systems,
18 and according to Ameranth's initial position on the "synchronous" limitation in this case,
19 which was consistent with its position in the *Menusoft* case, there were serious questions
20 about whether that system was infringing. Ameranth's substantive position on the validity
21 of the '077 Patent was also weak after the Supreme Court's decision in *Alice* and the
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24 ⁸ Those factors include: "(1) the litigant's history of litigation and in particular whether it
25 entailed vexatious, harassing or duplicative lawsuits; (2) the litigant's motive in pursuing
26 the litigation, e.g., does the litigant have an objective good faith expectation of prevailing?;
27 (3) whether the litigant is represented by counsel; (4) whether the litigant has caused
28 needless expense to other parties or has posed an unnecessary burden on the courts and
their personnel; and (5) whether other sanctions would be adequate to protect the courts
and other parties.'" *Id.* (quoting *Safir*, 792 F.2d at 24).

1 Federal Circuit’s decision in *Apple*. As stated above, Ameranth had a “responsibility to
2 reassess its case” after *Alice*, *Inventor Holdings*, 876 F.3d at 1379, and there is little
3 evidence that it did so. On the contrary, the record reflects that Ameranth pushed ahead
4 without any apparent concern that the ‘077 Patent might be found unpatentable. That
5 proved to be a mistake, and an especially obvious one after the Federal Circuit’s decision
6 in *Apple*. Ameranth’s intent to continue with this litigation, and to pursue litigation on
7 other patents from the same family, is indicative of its obstinate position, and suggests a
8 need to deter similar conduct in the future. *See Innovation Sciences, LLC v. Amazon.com,*
9 *Inc.*, No. 2020-1639, ___ Fed. Appx. ___, 2021 WL 28216, at *2 (Fed. Cir. Jan. 5, 2021)
10 (holding “that a district court is ‘within the scope of its discretion in finding [a] case to be
11 exceptional based on the weakness of [a party’s] § 101 arguments and the need to deter
12 similarly weak arguments in the future.’”); *see also Edekka LLC v. 3balls.com, Inc.*, No.
13 2:15-CV-541 JRG, 2015 WL 9225038, at *4 (E.D. Tex. Dec. 17, 2015) (stating questions
14 about whether patentee engaged in a “reasonable and thorough presuit investigation
15 regarding the § 101 standard and relevant authority before filing a significant number of
16 lawsuits ... identifies a clear need to advance considerations of deterrence.”)

17 The manner in which this case was litigated is not the stronger of the Domino’s
18 Defendants’ arguments, but it, too, supports a finding that this case is exceptional. As
19 explained above, Ameranth shifted its long-held position on a central element of its
20 invention, namely that the system be “synchronous” or “synchronized,” to avoid a finding
21 that the Domino’s Defendants did not infringe. Ameranth also shifted its position on
22 another central element, the “PHMC/PHC.” Ameranth’s conduct with respect to the issues
23 of scrolling and source code was not necessarily unreasonable, but that does not detract
24 from the other factors set out above, including Ameranth’s conduct on the issues of the
25 TransPad testimony and the screen counts, which raise serious questions and concerns
26 about Ameranth’s litigation conduct and strategy.

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1 As set out above, that ambitious strategy included filing more than forty cases in this
2 Court.⁹ The first case in this series of cases, Case No. 11cv1810, included several
3 Defendants and alleged claims based on the ‘850 and ‘325 Patents only. Thereafter,
4 Ameranth proceeded to file new cases against individual Defendants alleging infringement
5 of the ‘077 Patent and the ‘733 Patent. This scattershot approach made for unwieldy
6 litigation, and created procedural and logistical challenges well beyond the ordinary patent
7 case. It also resulted in repetitive, duplicative, and unnecessary motion work on behalf of
8 all parties and the Court.

9 Ameranth’s decision to file all of these cases at the same time also complicated the
10 litigation and slowed its progress. Although a small handful of Defendants settled with
11 Ameranth shortly after their cases were filed, the great majority did not, and those
12 remaining Defendants were not part of the same industry. Rather, they were from a variety
13 of industries, including restaurants, online restaurant reservation companies, online food
14 delivery companies, hotels, online hotel reservation companies, online travel reservation
15 companies, and online entertainment ticket companies, not to mention the tech giant Apple.
16 Some of these Defendants entered into a joint defense agreement, which helped to
17 consolidate certain issues and streamline certain proceedings, but given the diverse nature
18 of Defendants’ business operations, each Defendant often had to file its own pleadings or
19 a supplement to the joint pleading to make its individual position known. Although
20 Ameranth was within its rights to file suit against all of these Defendants, its decision to
21 cast such a wide net certainly prolonged the litigation in contravention of Federal Rule of
22 Civil Procedure 1, which states the Federal Rules should be “construed, administered, and
23 employed by the court and the parties to secure the just, speedy, and inexpensive
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26 ⁹ Although the present motion was filed in the Domino’s case only, the Court considers
27 Ameranth’s wider litigation in this Court in ruling on the present motion. *See Elec.*
28 *Comm’n Techs., LLC v. ShoppersChoice.com, LLC*, 963 F.3d 1371, 1377 (Fed. Cir. 2020)
(stating broader context of plaintiff’s lawsuit against defendant was “relevant
consideration[]” on exceptional case motion).

1 determination of every action and proceeding.” Fed. R. Civ. P. 1. With the first case, Case
2 No. 11cv1810, now approaching its ten-year anniversary, this litigation can hardly be said
3 to have fulfilled that purpose. Certainly, Ameranth does not bear complete responsibility
4 for the delay in resolving these cases, but it does bear responsibility for its initial decision
5 to file as many cases as it did and to proceed with all of them simultaneously.

6 Another point also deserves mention: Ameranth’s settlement with Pizza Hut.
7 Pursuant to the Court’s case management orders, Pizza Hut was the first Defendant
8 scheduled for trial with Ameranth. Two weeks before the trial was scheduled to start, the
9 Court issued an order setting Pizza Hut’s § 101 motion for argument. Three days after that
10 order issued, and approximately two weeks before the trial was scheduled to begin,
11 Ameranth and Pizza Hut entered into a confidential settlement agreement. Although there
12 may have been many reasons for the parties’ decision to settle, the timing of the settlement,
13 and Ameranth’s attempt thereafter to avoid a prompt ruling on the § 101 issue, is
14 “troubling.” *Cf. Shipping and Transit, LLC v. Hall Enterprises, Inc.*, No. CV 16-06535-
15 AG-AFM, 2017 WL 3485782, at *7 (C.D. Cal. July 5, 2017) (stating plaintiff’s repeated
16 dismissal of its own lawsuits to evade a ruling on the merits while continuing to file new
17 lawsuits advancing the same claims is “troubling.”) This is especially so given Ameranth’s
18 settlement with the *Menusoft* Defendants after the jury’s invalidity findings on the ‘850,
19 ‘325 and ‘733 Patents, and the parties’ agreement in that settlement to seek vacatur of those
20 findings.

21 Taking a further step back and considering Ameranth’s overall litigation conduct is
22 also revealing. From that perspective, Ameranth has had limited success before the one
23 jury to consider its Patents, as well with the PTAB, the Federal Circuit and this Court. The
24 only jury to have considered the ‘850, ‘325 and ‘733 Patents found to be invalid and not
25 infringed, and the PTAB and the Federal Circuit reached similar conclusions. This Court
26 and the Federal Circuit then found that certain claims of the ‘077 Patent were patent
27 ineligible. Yet, those losses have not had a deterrent effect on Ameranth’s behavior. On
28 the contrary, Ameranth had the jury verdicts erased, and settled with the Pizza Hut

1 Defendants on the eve of trial before the Court could hear their § 101 motion. When that
2 motion was eventually heard and decided adverse to Ameranth, Ameranth responded the
3 same way it responded to its other losses, with an appeal to the Federal Circuit, where its
4 loss was affirmed. Considering this pattern of continued bullishness in the face of
5 numerous defeats, and the totality of the circumstances discussed above, the Court finds
6 this is an exceptional case under §285.


7 **III.**

8 **CONCLUSION AND ORDER**

9 For the reasons set out above, the Court grants the motion to declare this case
10 exceptional. As part of their motion, the Domino's Defendants requested fees for the
11 CBMs and Appeals, but the Court declines to resolve that issue in the present order. Rather,
12 the parties should address whether those fees are reasonable in their briefing on the amount
13 of fees and costs to be awarded. Domino's shall file its opening brief on that issue on or
14 before March 5, 2021. Ameranth shall file its opposition brief on or before March 19,
15 2021, and Domino's shall file its reply brief on or before March 26, 2021. Counsel shall
16 also contact Judge Gallo's Chambers via email at efile_gallo@casd.uscourts.gov to
17 schedule a settlement conference to occur as soon as practicable.

18 **IT IS SO ORDERED.**

19 Dated: February 5, 2021

20 
21 Hon. Dana M. Sabraw, Chief Judge
22 United States District Court
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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

AMERANTH, INC.,

Plaintiff,

v.

DOMINO'S PIZZA, INC. and
DOMINO'S PIZZA, LLC

Defendants.

Case No.: 12cv0733 DMS (WVG)

**ORDER (1) DENYING
AMERANTH'S MOTION TO
RETAX COSTS AND (2) GRANTING
IN PART AND DENYING IN PART
DOMINO'S MOTION TO RETAX
COSTS**

On December 7, 2018, the Clerk of Court issued an Order Taxing Costs in this case, awarding Domino's costs in the amount of \$51,632.89. This was less than the \$75,197.10 that Domino's requested, and more than Ameranth thought was warranted. The parties now move to retax costs, Ameranth, in the amount of \$5,331.55, and Domino's, in the amount of \$68,805.39.

In its motion, Ameranth raises two issues. First, it argues the costs taxed for deposition transcripts (\$22,405.29) should be apportioned between the thirty-three Defendants because of their joint defense agreement, and as so apportioned, Domino's should be awarded only \$678.95 in these costs. Domino's does not dispute the existence

1 of the joint defense agreement, but asserts the agreement does not require apportionment
2 of these costs.

3 Civil Local Rule 54.1.b.3.a states: “The cost of an original and one copy of any
4 deposition (including videotaped depositions) necessarily obtained for use in the case is
5 allowable.” Here, there is no dispute the Clerk of Court awarded Domino’s costs in
6 accordance with this Rule. Ameranth’s only dispute is that the Clerk did not apportion
7 these costs according to the joint defense agreement. Although Ameranth cites case law in
8 which courts apportioned costs between cases and parties, it fails to cite any case law
9 requiring apportionment here. Accordingly, the Court declines to retax the costs associated
10 with the deposition transcripts.

11 Next, Ameranth argues the Clerk of Court should not have taxed the costs Domino’s
12 incurred in connection with Iron Mountain’s services related to Domino’s source code.
13 Domino’s requested \$24,884.90 in costs, and the Clerk awarded \$24,575. Ameranth
14 asserts the Clerk should not have awarded any costs here because they were not
15 “necessarily incurred” as required by Civil Local Rule 54.1.b.6.

16 In *CBT Flint Partners, LLC v. Return Path, Inc.*, 737 F.3d 1320, 1332 (Fed. Cir.
17 2013), the Federal Circuit was faced with a similar issue regarding “costs as they relate to
18 the production of source code[.]” The court found that:

19 [w]here legitimate trade-secret concerns entitle a producing party to use a
20 special form of production media (such as making production copies available
21 for review on a secured computer, rather than allowing the requester to take
22 possession of the production copies), the costs of such production media are
recoverable under section 1920(4).

23 *Id.* Ameranth argues the Federal Circuit did not apply Ninth Circuit law or the Local Rules
24 of this Court in reaching this decision, therefore *CBT Flint Partners* does not support the
25 award of costs here. However, the Court disagrees. The Federal Circuit clearly applied
26 federal law, specifically 28 U.S.C. § 1920(4), which applies in all federal courts.
27 Furthermore, the language of that statute (“necessarily obtained”), 28 U.S.C. § 1920(4), is
28 similar to the language in the Local Rules (“necessarily incurred”), Civ. L. R. 54.1.b.6,

1 which further supports application of *CBT Flint Partners* to the facts presented here. Under
2 the reasoning of that case, the Court declines to retax these costs.

3 Turning to Domino's motion, their first request is that the Court retax costs in the
4 amount of \$12,369.50 for converting documents to electronic format for production to
5 Ameranth. The Clerk of Court declined to award these costs, finding the determination of
6 a reasonable hourly rate was for the Court. The Clerk also noted that Domino's failed to
7 document the number of pages copied or converted. Domino's does not dispute that it
8 failed to provide that information, (*see* Reply at 3, ECF No. 96 at 7), which is required by
9 the Local Rules. Civ. L. R. 54.1.b.6.c. Therefore, the Court declines to retax these costs.

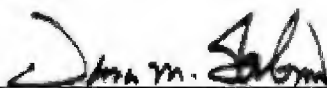
10 The only other item mentioned in Domino's motion is costs associated with creating
11 visual aids for trial. Specifically, Domino's asks the Court to retax costs here in the amount
12 of \$4,703. The Clerk of Court declined to tax these costs because he found Domino's did
13 provide sufficient evidence in support, and because the exhibits were not actually used at
14 trial. Domino's disputes both of those findings.

15 The Court agrees with Domino's that the Local Rules do not require that exhibits be
16 admitted at trial in order for the costs of those exhibits to be recoverable. *See* Civ. L. R.
17 54.1.b.7.a. The Court also agrees with Domino's that it provided sufficient evidence in
18 support of these costs. *See* ECF No. 72-1 at 5-6. Accordingly, the Court grants Domino's
19 motion to retax these costs.

20 For these reasons, Ameranth's motion to retax costs is denied, and Domino's motion
21 to retax costs is granted in part and denied in part, as set out above.

22 **IT IS SO ORDERED.**

23 Dated: March 4, 2021

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25 Hon. Dana M. Sabraw, Chief Judge
26 United States District Court
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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

AMERANTH, INC.,

Plaintiff,

v.

DOMINO'S PIZZA, INC. and
DOMINO'S PIZZA, LLC

Defendants.

Case No.: 12cv0733 DMS (WVG)

**ORDER ON DOMINO'S PIZZA, LLC
AND DOMINO'S PIZZA, INC.'S
REQUEST FOR FEES AND COSTS**

This case comes before the Court on the parties' briefing on the amount of fees and costs to be awarded to the Domino's parties after this Court's exceptional case finding. The Domino's parties request a total of \$3,341,492.69 in fees, non-taxable costs and prejudgment interest for work performed in the district court litigation and related appeal and the Covered Business Method ("CBM") proceedings and related appeal. Ameranth argues the Domino's parties should not recover fees or costs incurred on the CBM proceedings or the appeals, nor should they recover any prejudgment interest. Ameranth also asserts the Domino's parties should not recover any fees incurred before March 26, 2018, which was the date of the hearing in *IPDEV*, and that any fees incurred after that date should be reduced by fifty percent. Alternatively, Ameranth contends the Domino's parties should not recover any fees incurred before November 29, 2016, which is when the Federal Circuit

1 issued its decision in *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016).
2 Ameranth also urges the Court to decline to award fees for redacted billing, to reduce any
3 fees awarded based on the Domino's parties' misconduct, and to decline to award any non-
4 taxable costs.

5 **I.**

6 **DISCUSSION**

7 The Domino's parties used the lodestar method for calculating the fees incurred in
8 this case. Under that method, the number of hours expended is multiplied by the applicable
9 hourly rate. Ameranth does not object to the hourly rates charged or the total number of
10 hours expended, both of which the Court finds to be reasonable. The Court therefore turns
11 to Ameranth's other arguments for reducing the requested award.

12 The first of those arguments is that the Domino's parties should not recover any fees
13 for work performed on the appeal from this Court's summary judgment ruling or the CBM
14 proceedings and the appeal therefrom. The Domino's parties respond that the Court should
15 take a more holistic approach and award fees for all stages of the case.

16 The Federal Circuit has stated that "a case should be viewed more as an 'inclusive
17 whole' rather than as a piecemeal process when analyzing fee-shifting under § 285."
18 *Therasense, Inc. v. Becton, Dickinson & Co.*, 745 F.3d 513, 516 (Fed. Cir. 2014) (citing
19 *Comm'r, INS v. Jean*, 496 U.S. 154, 160 (1990)). In *Therasense*, the court stated that
20 although "parties often task the trial court with allocating costs and attorney's fees, ...
21 '[n]either § 285 nor its legislative history distinguishes between awarding attorney fees in
22 the district court and in the appellate court.'" *Id.* at 517 (quoting *Rohm & Haas Co. v.*
23 *Crystal Chemical Co.*, 736 F.3d 688, 692 (Fed. Cir. 1984)). "Indeed, § 285 does not bar
24 the trial court from awarding fees for the entire case, including any subsequent appeals."
25 *Id.* (citing *Jean*, 496 U.S. at 160).

26 Ameranth raises two arguments as to why the Court should not follow this approach,
27 namely that its appeals were not frivolous and that the CBM proceedings did not obviate
28 the need for further litigation in this Court. Neither of these arguments, however, provides

1 a basis for this Court to deviate from the holistic approach set out above. Therefore, the
2 Court rejects Ameranth's argument that the fees and costs incurred on appeal and in the
3 CBM proceedings should not be awarded to the Domino's parties.¹

4 Next, Ameranth urges the Court to put a temporal limitation on any fee award.
5 Ameranth offers two options in this regard. First, it asserts the Domino's parties should
6 not receive fees for any work performed before March 26, 2018, which is the date of the
7 *IPDEV* hearing. Although Ameranth maintains it did not take any inconsistent positions
8 in this case, it argues to the extent it may have created "an appearance of inconsistency"
9 on the "synchronous" limitation in the Patents, the only time it could have possibly done
10 so was at the *IPDEV* hearing. Accordingly, Ameranth argues any fees incurred prior to
11 that date are not recoverable. Ameranth's argument, however, places too much emphasis
12 on only one aspect of this Court's exceptional case finding. As the Court explained in its
13 rulings, that finding was based on a number of factors, not just Ameranth's conduct at the
14 *IPDEV* hearing. Thus, the Court rejects Ameranth's invitation to limit the Domino's
15 parties' fees to only those incurred after the *IPDEV* hearing.

16 Failing that cut-off date, Ameranth offers the Court another date before which fees
17 should not be recoverable: November 29, 2016, which is the date of the Federal Circuit's
18 decision in *Apple*. As set out in the Courts exceptional case order, Ameranth's case on the
19 '077 Patent was especially weak after the *Apple* decision. (ECF No. 134 at 11-12.)
20 However, as with the *IPDEV* hearing discussed above, that decision was not the only basis
21 for the Court's exceptional case finding. Rather, consistent with the *Octane Fitness*
22 standard, this Court considered and relied on the totality of the circumstances in this case
23 in making its exceptional case finding. Given that standard, and the Federal Circuit's
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26 ¹ After the parties submitted their briefs, the Court requested supplemental briefing on
27 whether *Amneal Pharmaceuticals LLC v. Almirall, LLC*, 960 F.3d 1368 (Fed. Cir. 2020),
28 affects the recovery of fees and costs related to the CBM proceedings. The Court reviewed
the parties' supplemental briefs, and finds *Amneal* does not apply here.

1 preference for a more holistic approach to fee-shifting under § 285, *Therasense*, 745 F.3d
2 at 517 (quoting *Jean*, 496 U.S. at 161–62), the Court declines to impose a cut-off date on
3 the recovery of fees in this case.

4 Next, Ameranth argues the Domino’s parties should not be entitled to recover fees
5 for redacted billing entries. The Domino’s parties explain their redactions covered “three
6 types of information: (1) communications with its client, (2) communications with the
7 joint defense group (“JDG”) and (3) the substance of legal/prior art research[,]” (Reply at
8 7), and thus all of their redactions were proper.

9 The case law supports the Domino’s parties. In *Clarke v. American Commerce Nat.*
10 *Bank*, 974 F.2d 127, 129 (9th Cir. 1992), the Ninth Circuit stated that “correspondence,
11 bills, ledgers, statements, and time records which also reveal the motive of the client in
12 seeking representation, litigation strategy, or the specific nature of the services provided,
13 such as researching particular areas of law, fall within the [attorney-client] privilege.” The
14 court has also stated that redactions are appropriate when they cover “what went on
15 between client and counsel, and among counsel[,]” and that work product protection
16 extends to “issues that may raise problems for one’s claim, or problems affecting the relief
17 one will obtain in district court after prevailing on” an argument. *Democratic Party of*
18 *Washington State v. Reed*, 388 F.3d 1281, 1286 (9th Cir. 2004). The redactions Ameranth
19 complains about appear to fall into these categories. For instance, the May 9, 2012
20 redactions follow the entry of an invalidity search, (Decl. of Thomas Cunningham in Supp.
21 of Opening Br. (“Cunningham Decl.”), Ex. A at 37²), and the subject of legal research.
22 (*Id.*) The September 20, 2012 redactions cover the topic of discussion between the JDG.
23 (*Id.* at 68.) These kinds of redactions are a far cry from the redactions in *IPS Group, Inc.*
24 *v. Duncan Solutions, Inc.*, No. 15-cv-1526-CAB (MDD), 2018 WL 3956109 (S.D. Cal.
25 Aug. 17, 2018), which is the case Ameranth relies upon. There, the moving party redacted
26

27
28 ² The page numbers cited here reflect the page number assigned by the Court’s CM/ECF
system.

1 the entirety of the work description for every billing entry. *See IPS Group, Inc. v. Duncan*
2 *Solutions, Inc.*, No. 15-cv-1526-CAB (MDD), ECF No. 301-3. Contrary to Ameranth's
3 suggestion, that case is not "instructive[.]" (Opp'n to Mot. at 20), and it does not support
4 Ameranth's request for a reduction of the fee award in this case based on any redacted
5 billings.

6 Next, Ameranth argues any fee award should be reduced due to the Domino's
7 parties' misconduct. The Domino's parties dispute that they engaged in any misconduct
8 in this case, and assert that Ameranth's argument to the contrary is baseless. The Federal
9 Circuit has held that the conduct of the prevailing party should be considered as part of the
10 totality of the circumstances in deciding an exceptional case motion. *Romag Fasteners,*
11 *Inc. v. Fossil, Inc.*, 866 F.3d 1330, 1340 (Fed. Cir. 2017). However, Ameranth fails to cite
12 any authority to support its argument that the conduct of the prevailing party should be
13 considered after the exceptional case finding is made and the court is considering the
14 amount of fees to be awarded, which is the situation here. Absent any authority to support
15 Ameranth's argument, the Court declines to adjust the fee award based on any alleged
16 misconduct on the part of the Domino's parties.

17 Next, Ameranth argues the Court should exercise its discretion and decline to award
18 the Domino's parties any non-taxable costs. In support of this argument, Ameranth relies
19 on the arguments discussed above, which the Court has rejected. Ameranth also raises a
20 specific objection to the "Computer Legal Research Charges" as excessive and
21 unexplained. The Court disagrees that these charges are excessive, but does agree that
22 some of the charges are unexplained. Although most of the charges appear to correspond
23 to legal research described in the relevant invoice, some invoices include "computer search
24 charges" without any mention of the performance of legal research. (*See, e.g.,*
25 *Cunningham Decl., Ex. A* at 9-12, 53-58.) On those charges, which total \$8,954.04 by the
26 Court's calculations, the Court agrees with Ameranth that those costs are not recoverable.
27 The remainder of the non-taxable costs are recoverable, however.

28

Ameranth's final argument is that the Court should not award any prejudgment interest because the Domino's parties failed to request it in their exceptional case motion and because Ameranth did not engage in "highly egregious conduct." As to the latter argument, there is no requirement that a party engage in "highly egregious conduct" before a court may award prejudgment interest on an attorney fee award under § 285. Rather, that decision is a discretionary one that depends on "all the facts and circumstances." *Mathis v. Spears*, 857 F.2d 749, 761 (Fed. Cir. 1988). In this case, Ameranth correctly points out that the Domino's parties "did not raise the prospect of prejudgment interest" in their exceptional case motion, and considering that circumstance, the Court declines to award prejudgment interest here. *See M-I Drilling Fluids UK Ltd. v. Dynamic Air Inc.*, No. 14-4857 (JRT/HB), 2018 WL 1399308, at *2 (D. Minn. Mar. 20, 2018) (declining to award prejudgment interest because defendant did not request it in fee motion).

II.


CONCLUSION

For all of the reasons set out above, the Court awards the Domino's parties the following fees and costs pursuant to 35 U.S.C. § 285:

Case	Attorneys' Fees	Costs	Total
District Court	\$2,233,510.70	\$167,964.23	\$2,401,474.93
Appeal of SJ	\$175,003.50	\$2,203.53	\$177,207.03
CBMs + Appeal	\$189,867.00	\$17,636.33	\$207,503.33
Totals	\$2,598,381.20	\$187,804.09	\$2,786,185.29

IT IS SO ORDERED.

Dated: June 21, 2021


 Hon. Dana M. Sabraw, Chief Judge
 United States District Court

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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

AMERANTH, INC.,

Plaintiff,

v.

DOMINO'S PIZZA, INC. and
DOMINO'S PIZZA, LLC

Defendants.

Case No.: 12cv0733 DMS (WVG)

**ORDER GRANTING AMERANTH'S
MOTION FOR ISSUANCE OF A
FINAL AND APPEALABLE
AMENDED JUDGMENT**

This case comes before the Court on Ameranth's motion for issuance of a final and appealable amended judgment. Defendants filed an opposition to the motion, and Plaintiff filed a reply.

Ameranth requests that the Court issue a final judgment in accordance with the Federal Circuit's November 1, 2019 judgment, and that the final judgment incorporate the Court's Orders finding this case exceptional and awarding Defendants their attorneys' fees and costs. Defendants do not object to the issuance of a final judgment that complies with the Federal Circuit's judgment, but they do object to inclusion of the issues of exceptional case and fees and costs in that final judgment.

Clearly, the Court must enter an amended judgment in accordance with the Federal Circuit's opinion. Whether the Court must include in the amended judgment the

1 exceptional case finding and the award of fees and costs is hotly disputed, apparently more
2 for tactical reasons than on the merits, but the Court finds no authority preventing it from
3 including those issues. Indeed, this Court granted a similar request in another case. *See*
4 *Digital Empire Limited v. Compal Electronics Inc.*, Case No. 14cv1688 DMS (KSC), ECF
5 No. 167. Thus, in the interests of finality and the efficient administration of justice, the
6 Court grants Ameranth's motion and issues the following Amended Judgment:

7 WHEREAS the Patent Trial and Appeal Board and/or the Federal Circuit Court of
8 Appeals has held all claims of U.S. Patent No. 6,384,850 (the "'850 Patent'"), all claims
9 other than claim 14 of U.S. Patent No. 6,871,325 (the "'325 Patent'"), and all claims of U.S.
10 Patent No. 6,982,733 (the "'733 Patent'") patent ineligible and/or invalid, and all appeals of
11 those decisions have been exhausted;

12 WHEREAS the issue of patent eligibility of certain claims of U.S. Patent No.
13 8,146,077 (the "'077 Patent'") under 35 U.S.C. §101 (hereinafter "Section 101") was
14 brought before this Court on summary judgment by Domino's Pizza, LLC and Domino's
15 Pizza, Inc. (collectively hereinafter "Domino's"), fully briefed, oral argument heard, and a
16 decision rendered;

17 WHEREAS, on October 11, 2018, the Court issued a Judgment (Doc. No. 66)
18 declaring all asserted claims of the '077 Patent (claims 1, 4-9, 11, 13-18) patent ineligible
19 under Section 101 and entering judgment in favor of Domino's on Domino's counterclaim
20 for invalidity of Ameranth's '850, '325, '733, and '077 Patents;

21 WHEREAS, on November 1, 2019, the Federal Circuit, Case No. 2019-1141/2019-
22 114, issued a Decision affirming in part and vacating in part the District Court's Order
23 granting summary judgment, and remanded the matter to the District Court to vacate the
24 October 11, 2018 Judgment with respect to claims 4 and 5 of the '077 Patent;

25 WHEREAS, on November 6, 2020, based upon the Court's October 11, 2018
26 Judgment (Doc. No. 66), Domino's brought a motion to declare this case exceptional and
27 to award it its fees and costs incurred in the matter under 35 U.S.C. §285 (hereinafter

28 ///

1 “Section 285”), and such motion was fully briefed and a decision rendered (Doc. No. 134);
2 and

3 WHEREAS, on June 21, 2021, the Court issued an Order (Doc. No. 169) awarding
4 Domino’s fees and costs against Ameranth pursuant to 35 U.S.C. §285,

5 Now, therefore, pursuant to Rule 58 of the Federal Rules of Civil Procedure and in
6 accordance with the Mandate of the Federal Circuit (Doc. No. 108), IT IS HEREBY
7 ORDERED AND ADJUDGED:

8 Domino's motion for summary judgment of unpatentability under Section 101 is
9 granted in part, and claims 1, 6-9, 11, and 13-18 of the '077 Patent, only, are declared patent
10 ineligible under Section 101 as set forth in the Court's Order Granting the Motion For
11 Summary Judgment Of Unpatentability (Doc. No. 1395 in Case No. 11-cv-1810 DMS-
12 WVG).

13 The case is declared exceptional under Section 285 as set forth in the Court’s Order
14 Granting in Part Defendants’ Second Renewed Motion to Declare Case Exceptional (Doc.
15 No. 134).

16 Domino’s is awarded fees and costs in this matter in the total amount of
17 \$2,786,185.29 under Section 285, as set forth in the Court’s Order on Domino’s Request
18 for Fees and Costs (Doc. No. 169).

19 Judgment is entered in favor of Domino’s on its counterclaim for patent ineligibility
20 of claims 1, 6-9, 11, and 13-18, only, of the '077 Patent, and on all claims of the ‘850, ‘325,
21 and ‘733 Patents other than claim 14 of the ‘325 Patent. Domino's other counterclaims
22 are dismissed without prejudice.

23 The Clerk of Court shall enter judgment accordingly and close this case.

24 **IT IS SO ORDERED.**
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1 Dated: November 18, 2021



Hon. Dana M. Sabraw, Chief Judge
United States District Court

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF CALIFORNIA

AMERANTH, INC.,

Plaintiff,

v.

DOMINO'S PIZZA, INC. and
DOMINO'S PIZZA, LLC

Defendants.

Case No.: 12cv0733 DMS (WVG)

**ORDER GRANTING AMERANTH'S
MOTION FOR ISSUANCE OF A
FINAL AND APPEALABLE
AMENDED JUDGMENT**

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Clearly, the Court must enter an amended judgment in accordance with the Federal Circuit's opinion. Whether the Court must include in the amended judgment the

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3 including those issues. Indeed, this Court granted a similar request in another case. *See*
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5 No. 167. Thus, in the interests of finality and the efficient administration of justice, the
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9 other than claim 14 of U.S. Patent No. 6,871,325 (the "'325 Patent'"), and all claims of U.S.
10 Patent No. 6,982,733 (the "'733 Patent'") patent ineligible and/or invalid, and all appeals of
11 those decisions have been exhausted;

12 WHEREAS the issue of patent eligibility of certain claims of U.S. Patent No.
13 8,146,077 (the "'077 Patent'") under 35 U.S.C. §101 (hereinafter "Section 101") was
14 brought before this Court on summary judgment by Domino's Pizza, LLC and Domino's
15 Pizza, Inc. (collectively hereinafter "Domino's"), fully briefed, oral argument heard, and a
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19 under Section 101 and entering judgment in favor of Domino's on Domino's counterclaim
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22 114, issued a Decision affirming in part and vacating in part the District Court's Order
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24 October 11, 2018 Judgment with respect to claims 4 and 5 of the '077 Patent;

25 WHEREAS, on November 6, 2020, based upon the Court's October 11, 2018
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27 to award it its fees and costs incurred in the matter under 35 U.S.C. §285 (hereinafter

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1 “Section 285”), and such motion was fully briefed and a decision rendered (Doc. No. 134);
2 and

3 WHEREAS, on June 21, 2021, the Court issued an Order (Doc. No. 169) awarding
4 Domino’s fees and costs against Ameranth pursuant to 35 U.S.C. §285,

5 Now, therefore, pursuant to Rule 58 of the Federal Rules of Civil Procedure and in
6 accordance with the Mandate of the Federal Circuit (Doc. No. 108), IT IS HEREBY
7 ORDERED AND ADJUDGED:

8 Domino's motion for summary judgment of unpatentability under Section 101 is
9 granted in part, and claims 1, 6-9, 11, and 13-18 of the '077 Patent, only, are declared patent
10 ineligible under Section 101 as set forth in the Court's Order Granting the Motion For
11 Summary Judgment Of Unpatentability (Doc. No. 1395 in Case No. 11-cv-1810 DMS-
12 WVG).

13 The case is declared exceptional under Section 285 as set forth in the Court’s Order
14 Granting in Part Defendants’ Second Renewed Motion to Declare Case Exceptional (Doc.
15 No. 134).


16 Domino’s is awarded fees and costs in this matter in the total amount of
17 \$2,786,185.29 under Section 285, as set forth in the Court’s Order on Domino’s Request
18 for Fees and Costs (Doc. No. 169).

19 Judgment is entered in favor of Domino’s on its counterclaim for patent ineligibility
20 of claims 1, 6-9, 11, and 13-18, only, of the '077 Patent, and on all claims of the ‘850, ‘325,
21 and ‘733 Patents other than claim 14 of the ‘325 Patent. Domino's other counterclaims
22 are dismissed without prejudice.

23 The Clerk of Court shall enter judgment accordingly and close this case.

24 **IT IS SO ORDERED.**
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1 Dated: November 18, 2021

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3 _____
4 Hon. Dana M. Sabraw, Chief Judge
5 United States District Court
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US006384850B1

(12) **United States Patent**
McNally et al.

(10) **Patent No.:** **US 6,384,850 B1**
 (45) **Date of Patent:** **May 7, 2002**

(54) **INFORMATION MANAGEMENT AND
 SYNCHRONOUS COMMUNICATIONS
 SYSTEM WITH MENU GENERATION**

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* cited by examiner

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(*) Notice: Subject to any disclaimer, the term of this
 patent is extended or adjusted under 35
 U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

An information management and synchronous communica-
 tions system and method facilitates database equilibrium and
 synchronization with wired, wireless and Web-based
 systems, user-friendly and efficient generation of computer-
 ized menus and reservations for restaurants and other appli-
 cations that utilize equipment with nonstandard graphical
 formats, display sizes and/or applications for use in remote
 data entry, information management and communication
 with host computer, digital input device or remote pager via
 standard hardwired connection, the internet, a wireless link
 or the like.

(21) Appl. No.: **09/400,413**

(22) Filed: **Sep. 21, 1999**

(51) **Int. Cl.**⁷ **G06F 3/00**

(52) **U.S. Cl.** **345/810; 345/841**

(58) **Field of Search** 345/334, 335,
 345/340, 352, 353, 765, 744, 781, 810,
 841; 705/26, 27, 37

(56) **References Cited**

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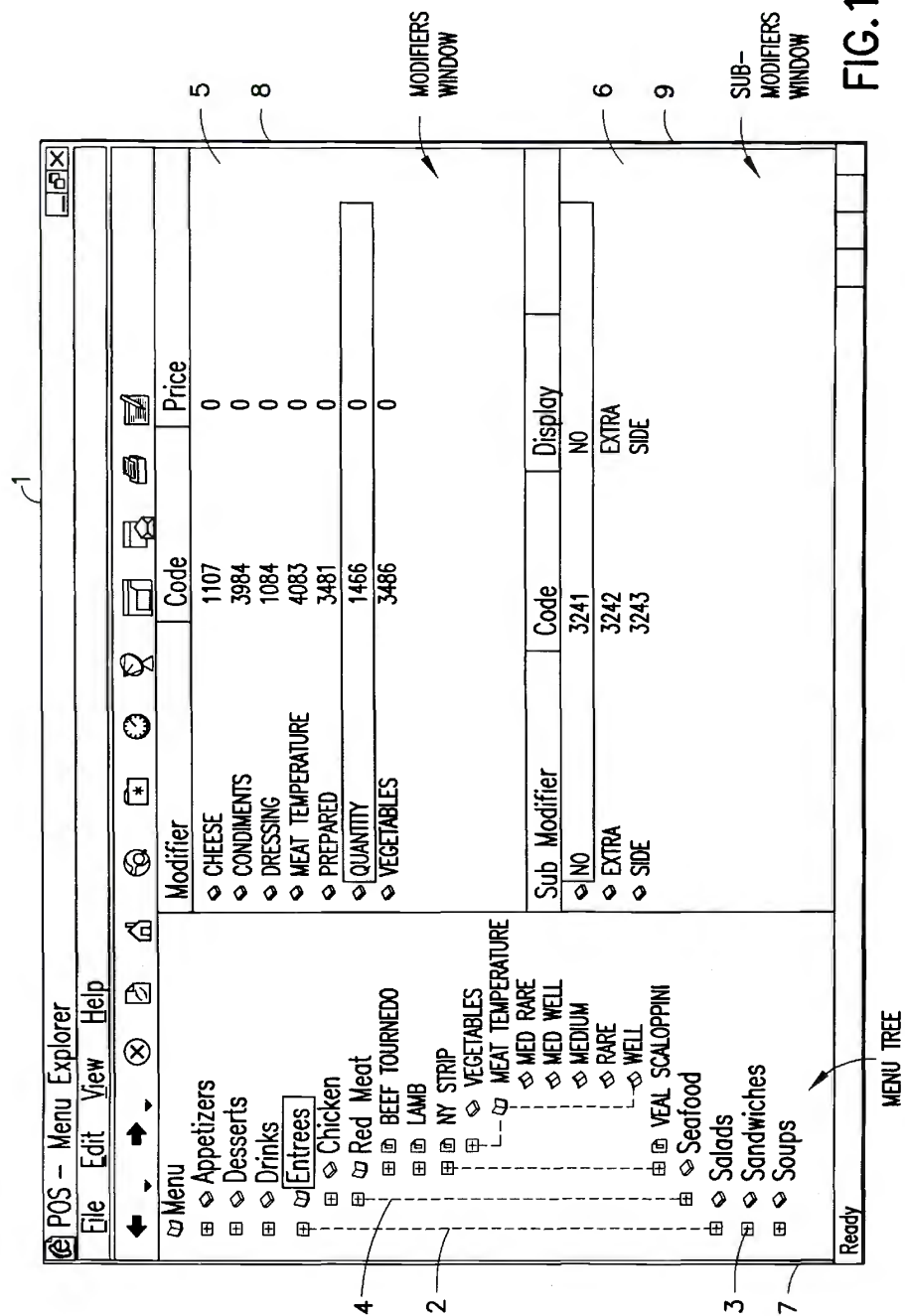
16 Claims, 6 Drawing Sheets

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May 7, 2002

Sheet 1 of 6

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Sheet 2 of 6

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Modifier

Long Name:

Short Name:

Code:

Price:

OK Cancel Browse

10

FIG. 2

Menu Category

Long Name:

Short Name:

OK Cancel Browse

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FIG. 3

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12

Menu Item

Long Name: Chicken Alaska

Code: 5612

Short Name: ChxAls

Price: 12.95

Prep. Time: 12

Recipe

Flame broiled brandy marinated Tender Chicken Breast topped with a creamy cilantro sauce. Served with steamed broccoli, carrots and zucchini. Spices include lemon pepper, paprika, ginger.

OK Cancel Browse

FIG. 4

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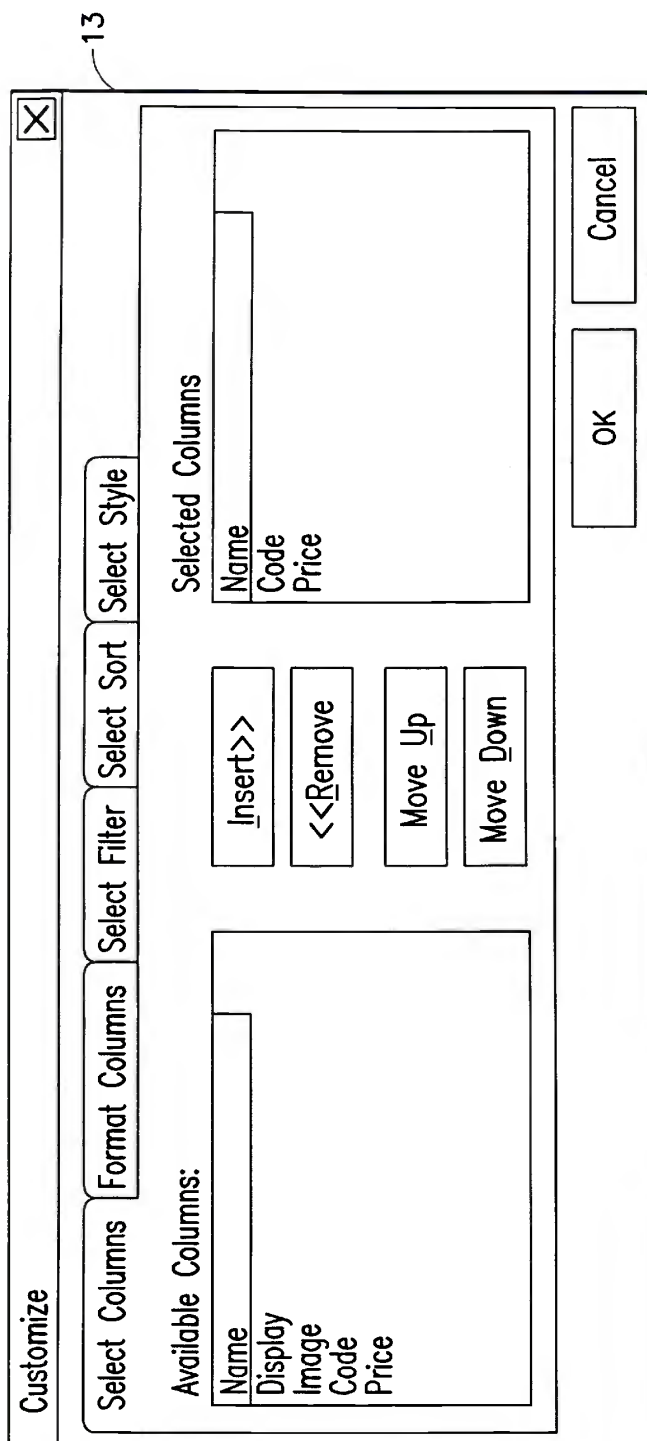


FIG.5

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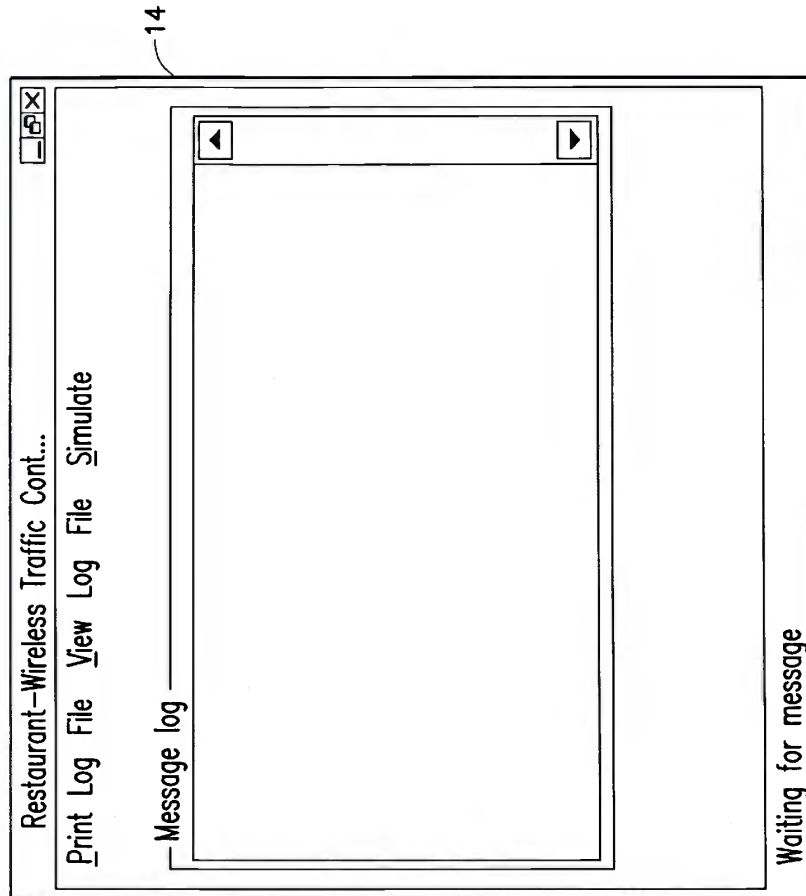


FIG. 6

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POSce-System

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Login CHECKS ORDER VIEW PAY

Choose Item: Tbl67 5st 2

App	Dessert	Drinks	Entrees
Salads	Sdwch	Soups	

Direction:

MAIN	PREV	PAGE	MODS
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Select Guest to Order for:

1	2	
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Last Selection

	REMOVE LAST
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OK Cancel Browse

FIG. 7

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INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS SYSTEM WITH MENU GENERATION

FIELD OF THE INVENTION

This invention relates to an information management and synchronous communications system and method for generation of computerized menus for restaurants and other applications with specialized display and synchronous communications requirements related to, for example, the use of equipment or software with non-PC-standard graphical formats, display sizes and/or applications for use in remote data entry, information management and synchronous communication between host computer, digital input device or remote pager via standard hardwired connection, the internet, a wireless link, smart phone or the like.

BACKGROUND OF THE INVENTION

While computers have dramatically altered many aspects of modern life, pen and paper have prevailed in the hospitality industry, e.g., for restaurant ordering, reservations and wait-list management, because of their simplicity, ease of training and operational speed. For example, ordering prepared foods has historically been done verbally, either directly to a waiter or over the telephone, whereupon the placed order is recorded on paper by the recipient or instantly filled.

Although not previously adapted for wide-scale use in the hospitality industry, various forms of digital wireless communication devices are in common use, e.g., digital wireless messengers and pagers. Also in common use are portable laptop and handheld devices. However, user-friendly information management and communication capability not requiring extensive computer expertise has not heretofore been available for use in everyday life such as for restaurant ordering, reservations and wait-list management. Hundreds of millions of dollars have been spent on personal digital assistant ("PDA") development seeking to produce a small, light-weight and inexpensive device that could be adapted to such uses; yet none have yielded a satisfactory solution.

One of the inherent shortcomings of PDA type devices is that, as they strive for small size, low weight and low cost, they must compromise the size and clarity of the operator display medium interface itself, which in most cases is one of a variety of LCD (liquid crystal display) type devices. As the size of the display shrinks, the amount of information that may be displayed at any one point or time is commensurately decreased, typically requiring multiple screens and displays to display information to the operator. This reduces the overall utility of the device. Additionally, the smaller display and keyboard results in a non-optimal operator interface, which slows down operation and is thus unacceptable for the time criticality of ordering, reservation and wait-list management and other similar applications. This necessitates many design compromises which in the aggregate have resulted in limited acceptance of PDA type devices in the restaurant and hospitality fields.

Many of the negatives prevalent in earlier devices have been eliminated, but, to date, there is still no integrated solution to the ordering/waitlist/reservation problem discussed above. With the advent of the Palm® and other handheld wireless devices, however, the efforts to make such devices ubiquitous have begun to bear fruit at least in some areas, e.g., personal calendars. However, substantial use of such devices in the restaurant and hospitality context has not occurred to date. As discussed above, at least one of the

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reasons PDAs have not been quickly assimilated into the restaurant and hospitality industries is that their small display sizes are not readily amenable to display of menus as they are commonly printed on paper or displayed on, e.g., large, color desktop computer screens. Another reason is that software for fully realizing the potential for wireless handheld computing devices has not previously been available. Such features would include fast and automatic synchronization between a central database and multiple handheld devices, synchronization and communication between a World Wide Web ("Web") server and multiple handheld devices, a well-defined application program interface ("API") that enables third parties such as point of sale ("POS") companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database. A single point of entry for all hospitality applications to communicate with one another wirelessly has also previously been unavailable. Such a single point of entry would work to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online would be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices would be reflected instantaneously on the backoffice server, Web pages and the other handheld devices.

For the foregoing reasons, paper-based ordering, waitlist and reservations management have persisted in the face of widespread computerization in practically all areas of commerce. At most, computerization of these functions has been largely limited to fixed computer solutions, i.e., desktop or mainframe, because of the problems heretofore faced in configuring wireless handheld devices and maintaining database synchronization for such applications. Specifically, the unavailability of any simple technique for creating restaurant menus and the like for use in a limited display area wireless handheld device or that is compatible with ordering over the internet has prevented widespread adoption of computerization in the hospitality industry. Without a viable solution for this problem, organizations have not made the efforts or investments to establish automated interfaces to handheld and Web site menus and ordering options.

A principal object of the present invention is to provide an improved information management and synchronous communications system and method which facilitates user-friendly and efficient generation of computerized menus for restaurants and other applications that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.

A further object of the present invention is to provide an improved information management and synchronous communications system and method which provides for entry, management and communication of information from the operator as well as to and from another computer, Web page menu, remote digital device using a standard hardwired connection, the internet or a wireless link.

A further object of the present invention is to provide an improved information management and synchronous communications system which is small, affordable and light-weight yet incorporates a user-friendly operator interface and displays menus in a readily comprehensible format.

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A further object of the present invention is to provide a synchronous information management and communications system which enables automatic updating of both wireless and internet menu systems when a new menu item is added, modified or deleted from any element of the system.

SUMMARY OF THE INVENTION

The foregoing and other objects of the present invention are provided by a synchronous information management and communications system and method optimized for simplicity of operation which incorporates menu generation for creation of menus to be used with wireless remote handheld computer and PDA devices, the internet or any application where simple and efficient generation of menus is appropriate. The menu generation approach of the present invention includes a desktop software application that enables the rapid creation and building of a menu and provides a means to instantly download the menu configuration onto, e.g., a handheld device or Web page and to seamlessly interface with standard point of sale ("POS") systems to enable automatic database updates and communication exchanges when a change or input occurs in any of the other system elements. To solve the above and other related problems, an information management and communications system is provided which results in a dramatic reduction in the amount of time, and hence cost, to generate and maintain computerized menus for, e.g., restaurants and other related applications that utilize non-PC-standard graphical formats, display sizes or applications.

The menu generation approach of the present invention has many advantages over previous approaches in solving the problem of converting paper-based menus or Windows® PC-based menu screens to small PDA-sized displays and Web pages. In one embodiment, the present invention is a software tool for building a menu, optimizing the process of how the menu can be downloaded to either a handheld device or Web page, and making manual or automatic modifications to the menu after initial creation.

The use of wireless handheld devices in the restaurant and hospitality industry is becoming increasingly pervasive as restaurant owners and managers become more aware of the benefits. With the proper wireless handheld system in place, restaurants can experience increased table turns from improved server productivity and shorter order taking and check paying times. Restaurants and POS companies seeking to provide a wireless handheld interface to their desktop-based POS systems or a Web page equivalent face several challenges. These challenges include building a menu using their existing database and transferring the menu onto handheld devices or Web pages that will interface with servers wirelessly or to restaurants/customers over the internet. The menu generation approach of the present invention is the first coherent solution available to accomplish these objectives easily and allows one development effort to produce both the handheld and Web page formats, link them with the existing POS systems, and thus provides a way to turn a complicated, time-consuming task into a simple process.

The information management and synchronous communications system of the present invention features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with

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direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The communication module also provides a single point of entry for all hospitality applications, e.g., reservations, frequent customer ticketing, wait lists, etc. to communicate with one another wirelessly and over the Web. This communication module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol and can be easily updated to work with a new communication protocol without modifying the core hospitality applications. A single point of entry works to keep all wireless handheld devices and linked web sites in synch with the backoffice server applications so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online can be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices are reflected instantaneously on the backoffice server Web pages and the other handheld devices.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing features and advantages of the present invention can be appreciated more fully from the following description, with references to the accompanying drawings in which:

FIG. 1 is a schematic representation of a window displayed on a computer display screen which shows a hierarchical tree menu, modifier window and sub-modifier window in conformity with a preferred embodiment of the present invention.

FIG. 2 is a schematic representation of a modifier dialog box in conformity with a preferred embodiment of the present invention.

FIG. 3 is a schematic representation of a menu category dialog box in conformity with a preferred embodiment of the present invention.

FIG. 4 is a schematic representation of a menu item dialog box in conformity with a preferred embodiment of the present invention.

FIG. 5 is a schematic representation of a display customization dialog box in conformity with a preferred embodiment of the present invention.

FIG. 6 is a schematic representation of a communications control window in conformity with a preferred embodiment of the present invention.

FIG. 7 is a schematic representation of a point of sale interface on a wireless handheld device for use in displaying page menus created in conformity with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Most personal computers today run under an operating system that provides a graphical user interface ("GUI") for accessing user applications. A GUI is used in the preferred embodiment of the present invention. Through an interface of windows, pull-down menus, and toolbars, GUI operating systems have simplified PCs and have rendered computer technology more user friendly by eliminating the need to memorize keyboard entry sequences. In addition, GUIs allow users to manipulate their data as they would physical

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entities. For example, a window can represent a file and the contents of the window can represent the records of the file. The window can be opened, closed, or set aside on a desktop as if it were an actual object. The records of the file can be created, deleted, modified and arranged in a drag-and-drop fashion as if they also were physical objects. The most common GUI operating systems that provide this "object-oriented" environment for personal computers are Microsoft Windows® systems, including Windows CE® for handheld wireless devices and the like. Generally, a particular application program presents information to a user through a window of a GUI by drawing images, graphics or text within the window region. The user, in turn, communicates with the application by "pointing" at graphical objects in the window with a pointer that is controlled by a hand-operated pointing device, such as a mouse, or by pressing keys on a keyboard.

The use of menus is conventional in GUIs for software applications. Menus are typically utilized to provide end users of applications with available choices or processing options while using the applications. For example, in a typical desktop or interactive application, selection of a "file" from a menu bar may cause display of a context menu which provides "file" options. File options can have additional subordinate or child options associated with them. If a file option having subordinate options is selected, the child options are displayed in context in a child menu or submenu proximate to the selected parent option. One or more of the child options provided in the child menu may have further subordinate options. Thus, such a menu system comprises cascading sets of menus which are displayable in context to show the parent/child relationships between options of the context menu. A menu system of this type is incorporated into the preferred embodiment of the invention.

The preferred embodiment of the present invention uses typical hardware elements in the form of a computer workstation, operating system and application software elements which configure the hardware elements for operation in accordance with the present invention. A typical workstation platform includes hardware such as a central processing unit ("CPU"), e.g., a Pentium® microprocessor, RAM, ROM, hard drive storage in which are stored various system and application programs and data used within the workstation, modem, display screen, keyboard, mouse and optional removable storage devices such as floppy drive or a CD ROM drive. The workstation hardware is configured by software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including internet browsing software) and application software components. The preferred embodiment also encompasses a typical file server platform including hardware such as a CPU, e.g., Pentium® microprocessor, RAM, ROM, hard drive, modem, and optional removable storage devices, e.g., floppy or CD ROM drive. The server hardware is configured by software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including Web server software) and database software.

A computer workstation for use in the preferred embodiment also includes a GUI. As is conventional, the GUI is configured to present a graphical display on the display screen arranged to resemble a single desktop. Execution of an application program involves one or more user interface objects represented by windows and icons. Typically, there may be several windows and icons simultaneously present on the desktop and displaying information that is generated by different applications.

The window environment is generally part of the operating system software that includes a collection of utility programs for controlling the operation of the computer system. The computer system, in turn, interacts with appli-

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cation programs to provide higher level functionality, including a direct interface with the user. Specifically, the application programs make use of operating system functions by issuing task commands to the operating system which then performs the requested task. For example, an application program may request that the operating system display certain information on a window for presentation to the user.

An aspect of the preferred embodiment of the information management and communications system of the invention is shown in FIG. 1. FIG. 1 shows an example of the GUI provided by the operating system of the preferred embodiment of the present invention. With reference to FIG. 1, the preferred embodiment includes an intuitive GUI 1 from which to build a menu on a desktop or other computer. A hierarchical tree structure 2 is used to show the different relationships between the menu categories 3 (e.g., soups, salads, appetizers, entrees, deserts, etc.), menu items 4 (e.g., green salad, chicken caesar salad, etc.), menu modifiers 5 (e.g., dressing, meat temperature, condiments, etc.) and menu sub-modifiers 6 (e.g., Italian, French, ranch, bleu cheese, etc.).

The procedure followed in configuring a menu on the desktop PC and then downloading the menu configuration onto the POS interface on the handheld device in conformance with the preferred embodiment is as follows.

The menu configuration application is launched by clicking on the appropriate icon on the desktop display screen. FIG. 1 will then be displayed. There are three windows on the screen shown in FIG. 1. The left window is the menu tree 7, also called the tree view. The top right window is the Modifiers window 8 and the bottom right window is the Sub-Modifiers window 9. The Sub-Modifiers window lists the sub-modifiers that correspond to the modifier that is selected. The views on the right are referred to as list views. There are several ways of invoking a command, including using the menu options; using the context menu (right mouse click); using the keyboard or using the toolbar icons. For example, if it is desired to add a category to the menu, the following four options are available: (1) clicking on Edit, Add Category; (2) right mouse clicking on Menu, then clicking on Add Category; (3) highlighting Menu, then typing Ctrl+T or (4) clicking on the Add Category icon on the toolbar. To add an item to a category, the following options are available: (1) highlighting the category to which it is desired to add an item and then clicking on Edit>Add Item; (2) right mouse clicking on the desired category and then clicking on Add Item; (3) highlighting the desired category, then typing Ctrl+N or (4) clicking on the Add icon on the toolbar.

When building a menu, it should be kept in mind that the menu items are stored using a tree metaphor similar to how files are stored on a PC with folders and subfolders. The menu structure is similar to the Windows® File Explorer in the way the items are organized hierarchically. Below is an example of how an item may be configured:

```

Menu
>> Entrees
    >> Red Meat
        >> NYStrip
            >> Vegetables
                >> Tomato
                >> Lettuce
            >> Meat Temperature
                >> Medium Rare
  
```

In the above example, Menu is the root. Entrees is a menu category. Red Meat is an Entree category. NY Strip is a

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modifier. Vegetable is a modifier. Meat Temperature is a modifier. Medium Rare is a sub-modifier of Meat Temperature.

The steps taken in building a menu are as follows:

1. Add Modifiers;
2. Add Sub-Modifiers and link them to the Modifiers;
3. Create Menu categories;
4. Add menu items to the categories;
5. Assign Modifiers to the menu items;
6. Preview the menu on the POS emulator on the desktop PC;
7. Download the menu database to the handheld device.

To add modifiers, a user clicks on the inside of the Modifiers window, then (1) clicks on Edit>Add Modifier, (2) Presses Ctrl+N; (3) right mouse clicks in the Modifiers window, then clicks on Add Modifiers or (4) clicks on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in the Modifier dialog box 10 shown in FIG. 2. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and "OK" is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item as a modifier. To delete a modifier, the modifier is selected and the Delete key pressed on the keyboard. To edit a modifier, either the modifier is double clicked or the Enter key is pressed.

Sub-modifiers represent the last level of modifiers that can be assigned to a menu tree. To add sub-modifiers, the modifier to which sub-modifiers are to be assigned is selected. Then, the focus is set on the sub-modifier window by clicking inside the Sub-Modifier window as follows: (1) clicking on Edit>Add Sub-Modifier; (2) pressing Ctrl+N; (3) right mouse clicking in the Sub-Modifiers window, then clicking on Add Sub-Modifiers or (4) clicking on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in a Sub-Modifier dialog box similar to the Modifier dialog box shown in FIG. 2. As with modifiers, the Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. As before, if there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item as a sub-modifier. To delete a sub-modifier, the sub-modifier is selected and the Delete key depressed on the keyboard. To edit a sub-modifier, either the sub-modifier is double clicked or the Enter key is pressed.

Menu categories are created from the root. Some examples of categories are Appetizers, Soups, Salads, Entrees, Desserts, etc. The first step is to click on Menu in the menu tree window. Categories are added by (1) clicking on the Add Category icon from the toolbar; (2) clicking on Edit>Add Category or (3) pressing Ctrl+T. As shown in FIG. 3, Menu Category dialog box 11 then appears in which to enter the Long and Short names for the menu category.

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To add menu items to categories, the menu category which is being built is clicked. For example, if items are being added to Appetizers, the Appetizers branch is clicked on. Then the Edit>Add Item is clicked on or Ctrl+N pressed. As before, if a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code, Prep Time, Recipe and Price into the Menu Item dialog box 12 shown in FIG. 4. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. Prep Time is the time it takes to prepare the meal and Recipe would include preparation methods and ingredients that are used in the preparation of the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item to the category.

Once the menu items have been entered, it may be desired to assign some modifiers to the menu items. For example, it may be desired to assign meat temperature to a steak order. To accomplish this, first the modifier to be assigned is selected, then the menu item on the tree view that is to be assigned the modifier is clicked on and then Edit>Assign Modifier is clicked on. Or, the modifier can simply be dragged and dropped onto the menu item to link them. A dialog box is then displayed asking if this modifier is a required modifier. If it is a required modifier, the display icon will be red but if it is a non-required modifier the display icon will be green. As many modifiers as are applicable can be assigned. If any changes are made to the modifiers, those changes will be automatically reflected throughout the menu tree.

Once the modifiers have been entered, it may be desired to assign sub-modifiers to the modifiers items. For example, it may be desired to add Honey Mustard as a sub-modifier to Dressing. To accomplish this, first the modifier to be assigned a sub-modifier is selected, then the sub-modifier window is clicked on, then Edit>Add Sub Modifier is clicked on, Ctrl+N entered or the Add icon from the toolbar is clicked on. Or, the sub-modifier can simply be dragged and dropped onto the modifier to link them.

When the menu has been completely configured, it can be previewed on a POS emulator on the desktop to verify that the menu is correctly configured before downloading it to the handheld device. To preview, File>Preview Database is clicked on or the Preview Database icon from the toolbar is clicked on. The handheld POS emulator on the desktop can then be run. If the configuration is deemed acceptable, the handheld device is connected to the desktop PC to ensure that a connection has been established; the POS application on the handheld device is exited and File>Download Database is clicked on or the Download Database icon from the toolbar is clicked on. If there is an existing menu database on the handheld device, the system will ask if the existing database should be replaced. Yes is clicked if existing database replacement is desired.

A database function enables the creation of, e.g., a breakfast menu, lunch menu and dinner menu and downloading them to a handheld device. Functions available are (1) creating a new database; (2) opening an existing database; (3) saving a database under a different name. To access these functions, File is clicked on the menu bar.

The preferred embodiment encompasses customized layout, views and fonts. To set the focus on the view it is

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desired to change, click inside the desired window. The main customizing dialog box is accessed by clicking on View>Customize View. A dialog box 13, as shown in FIG. 5, will be displayed including tabs that allow the following options: selection of Columns to display in the list view by choosing and arranging the fields to display in the Modifiers and Sub-Modifiers windows; formatting Columns by specifying the column widths and justification; selecting Filter allows restricting the list to display only the items that meet certain criteria. For example, display of modifiers with codes between 500 and 550. Selecting Sort allows sorting the modifiers or sub-modifiers according to any of the available fields such as Name, Code or Price. Selecting Style facilitates choice of font type, style, size, etc. To change the font in a particular window, click on View>Fonts or right mouse click in the desired window and then click on Fonts. To change the size of the windows, drag the borders of the windows to expand or contract the size of the windows. To change the column widths, simply drag the edge of the column headers to increase or decrease the column widths.

A communications control program monitors and routes all communications to the appropriate devices. It continuously monitors the wireless network access point and all other devices connected to the network such as pagers, remote devices, internet Web links and POS software. Any message received is decoded by the software, and then routed to the appropriate device. No user action is needed during operation of the software once the application has been launched. To launch the communications control module, a Wireless Traffic icon is clicked on the desktop PC. When the program loads, the screen shown in FIG. 6 appears. Messages received are logged in the window 14 shown in FIG. 6 with a time stamp. The messages are also logged to a file on the hard drive. This provides a mechanism to monitor all traffic across the network (possibly useful for troubleshooting, or maintenance, but not necessary for normal operation). The program may be minimized so the screen is not displayed on the desktop, but it must be running for proper communications to exist between all devices on the network.

As stated, the preferred embodiment of the present invention includes the use of and compatibility with GUI technology. A drag-and-drop approach is used for organizing the tree structure 2 in the generated menu. Drag-and-drop is also used for assigning modifiers (modifiers can be dragged from the modifiers window 5 and dropped onto the menu item 4 for assignment). In-cell editing results in fast editing of items in building the menus. Customizable fonts enable users to change font types, style and size. Customizable layouts enable users to resize windows, change icons and display preferences. The inventive approach provides for fully persistent storage between sessions, even if a session is improperly or abruptly terminated. Font and the tree state (i.e., which nodes are expanded/collapsed) are stored between sessions. Layout for modifiers and sub-modifiers list views (filter, columns, formatting, font, etc.) are stored between sessions. The last database used is likewise stored between sessions. Splitter views allow the user to see different views at the same time. Each view is displayed on its own section of the screen. Views can be resized via the keyboard or a mouse by simply dragging the splitter in the middle.

An automated function is provided to import existing POS databases into the inventive menu generation system and, as discussed above with respect to the detailed example of how to use the preferred embodiment, an automated download procedure is provided to transfer the desktop database onto

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a handheld device and/or Web page. Also as discussed, the preferred embodiment facilitates preview of the handheld device or Web page version of the POS menu on the desktop before downloading and configuration. Customizable desktop menu generation is contemplated, as discussed above, in the form of customizable fonts, columns, layouts, etc. The inventive approach also includes templates for common modifiers that can be assigned to similar menu items. The preferred embodiment also supports multiple databases, thus providing for the creation and storing of different menu databases on handheld devices such as breakfast, lunch or dinner menus. The user can then select the appropriate database to reflect the time of day.

FIG. 7 is a schematic representation of a point of sale interface 15 for use in displaying a page-type menu 16 created using the inventive menu generation approach. As can be seen from FIG. 7, the page menu is displayed in a catalogue-like point-and-click format whereas the master menu, FIG. 1, is displayed as a hierarchical tree structure. Thus, a person with little expertise can "page through" to complete a transaction with the POS interface and avoid having to review the entire menu of FIG. 1 to place an order. A PDA or Web page format could appear like FIG. 7 or the display could be configured for particular requirements since fully customizable menu generation and display are contemplated.

The POS interface on the handheld device supports pricing in the database or querying prices from the POS server. The POS device also can be customized with respect to "look and feel" for the particular version. As can be seen in FIG. 7, the POS interface provides for billing, status and payment with respect to orders. A myriad of options can be provided depending on the application.

Advanced database functions are provided in the preferred embodiment of the invention, including an automated download process onto handheld devices and/or Web sites. In the preferred embodiment, the menu generation system of the present invention uses an API called ActiveX Data Objects ("ADO") for database access. ADO is useful in a variety of settings. It is built on top of OLE DB and can be used to talk to databases and, in the future, any data source with any OLE DB driver. Advanced querying is supported. The database can be queried on virtually all fields. Queries can be built using SQL syntax for experienced users or can be created using a query builder which guides users through the creating process. Advanced error handling is supported. Errors occurring at run time can be trapped. A descriptive message is displayed to alert the user and provide error information. However, the application does not terminate when the errors happen. The source code is easy to maintain and modify, thus allowing for on time delivery of customized versions of the software. The advanced database functions produce well-designed databases that accommodate growth and scalability.

The inventive menu generation approach provides a solution for the pervasive connectivity and computerization needs of the restaurant and related markets. The inventive solution includes automatic database management and synchronization, PDA and handheld wireless operating system integration and optimization, wireless communications and internet connectivity, user interface design, and graphics design.

In the preferred embodiment, the menu generation approach of the present invention uses Windows CE® as the operating system for the handheld devices. Windows CE® provides the benefits of a familiar Windows 95/98/NT® look and feel, built-in synchronization between handheld

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devices, internet and desktop infrastructure, compatibility with Microsoft Exchange®, Microsoft Office 9® and TCP/IP quick access to information with instant-on feature.

Windows CE® provides a basic set of database and communication tools for developer use. However, interfacing with these tools to provide application specific results can be a complex task. In addition to the menu generation described above, a set of software libraries described herein in conformance with the present invention not only enhances the basic Windows CE® functionality by adding new features but also maximizes the full potential of wireless handheld computing devices. Such features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The synchronous communications control module discussed above provides a single point of entry for all hospitality applications to communicate with one another wirelessly or over the Web. This communications module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol. This layer can be easily updated to work with a new communication protocol without having to modify the core hospitality applications. The single point of entry works to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online is automatically communicated to the backoffice server which then synchronizes with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices will be reflected instantaneously on the backoffice server and the other handheld devices.

The software applications for performing the functions falling within the described invention can be written in any commonly used computer language. The discrete programming steps are commonly known and thus programming details are not necessary to a full description of the invention.

A simple point-to-point wireless capability is contemplated which permits simple digital messages to be sent from the wireless handheld devices to a receiver in a beeper and/or valet parking base-station. The POS interface of FIG. 7 is representative of the display on a typical wireless device used in conformity with the invention. A simple protocol is used to acknowledge receipt of the message and thus simultaneous communication is not necessary, which reduces the cost of the wireless link. The range of the wireless link is determined by the characteristics of the radio transceiver. Adding a wireless link allows paging of beeper equipped customers directly from the operator interface on the wireless handheld devices and communication to and from various input/output transmitters and receivers to update the status of the order, reservation or other information and thus further reduce the workload on the operator and enable operations to proceed much faster. This link could also be hardwired or otherwise implemented using any two-way messaging transport.

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A further aspect of the invention is the use of the menus generated in accordance with the described technique to place orders from wireless remote handheld devices or from remote locations through the internet. The World Wide Web is a distributed hypermedia computer system that uses the internet to facilitate global hypermedia communication using specified protocols. One such protocol is the Hypertext Transfer Protocol ("HTTP"), which facilitates communication of hypertext. Hypertext is the combination of information and links to other information. In the context of the Web, hypertext is defined by the Hypertext Mark-up Language ("HTML"). The links or hyperlinks in a HTML document reference the locations of resources on the Web, such as other HTML documents. Another language used in creating documents for use on the Worldwide Web, to display on computer screens, or to create speech style sheets for use in, e.g., telephones, is the Extensible Mark-Up Language ("XML"). XML is a "metalanguage", i.e., a language for describing languages which was developed to eliminate the restrictions of HTML.

The Web is a client-server system. The HTML documents are stored on Web server computers, typically in a hierarchical fashion with the root document being referred to as the home page. The client specifies a HTML document or other source on the server by transmitting a Uniform Resource Locator ("URL") which specifies the protocol to use, e.g., HTTP, the path to the server directory in which the resource is located, and filename of the resource. Users retrieve the documents via client computers. The software running on the user's client computer that enables the user to view HTML documents on the computer's video monitor and enter selections using the computer's keyboard and mouse is known as a browser. The browser typically includes a window in which the user may type a URL. A user may cause a URL to be transmitted by typing it in the designated window on the browser or by maneuvering the cursor to a position on the displayed document that corresponds to a hyperlink to a resource and actuating the mouse button. The latter method is commonly referred to simply as "clicking on the hot-spot" or "clicking on the hyperlink". The hyperlink methodology is contemplated for use in accordance with the preferred embodiment to transmit orders via the internet. Web server application software exists that enables a user to shop for and order merchandise. Such systems are sometimes referred to as electronic merchandising systems or virtual storefronts. Systems that enable a user to choose among several retailers' goods are sometimes referred to as electronic malls. An electronic retailer's or electronic mall operator's Web server provides HTML forms that include images and descriptions of merchandise. The user may conventionally search for an item by entering a key word search query in a box on a form. When a user selects an item, the server may provide a linked form that describes that item in further detail. The user may also conventionally enter ordering information into boxes on the form, such as the type and quantity of the item desired. The information entered by the user is transmitted to the server. The user may select multiple items in this manner and then enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer. As can be appreciated, ordering merchandise can also be done from menus. The generation of menus of items or merchandise for sale over the internet is readily accomplished by the menu generation approach of the present invention.

Searching for items that the user is interested in purchasing is insufficient in prior merchandising systems. Database

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management programs use index searching to facilitate rapid searching of large amounts of data. The creator of the database may instruct the program to use specified fields in the database as indexed or key fields. The program locates all terms in the database that appear in the indexed fields and stores them in an index table. Each entry in the index table includes a term and corresponding pointer to the location in the database where the term is found. If a user initiates a search for a term that is present in the index table, the program can locate the instances of that term in the database with exceptional speed. Users who are familiar with the particular database they are searching will generally know which fields are indexed and will know the format of the data in those fields. For example, a user of a database containing the inventory of a bookstore may know that users can search for the names of authors of books and that a user who wishes to do so should enter the author's last name first. A user having such knowledge will therefore be able to search efficiently. Users of electronic merchandising systems, however, are generally end-consumers who have no knowledge of a merchant's database. If, as is very likely, such a user initiates a search for a term that is not present in the index table, the program must sequentially search through all records in the database. Sequential records are typically linked by pointers. Using pointers in this manner is very demanding on server resources, resulting not only in an exceptionally slow search, but also creating a bottleneck for other processes that the server may be executing. The menu generation approach of the present invention can be used to create customized menus from a database that includes every item of merchandise the vendor has for sale. In this manner, customers can scan the generated menu much more readily than they could view the entire database and the necessity of having familiarity with the database is eliminated as well, reducing the need for resource intensive pointers.

While the preferred embodiment of the invention is for the generation of restaurant menus and the like, the broad scope of the invention is far greater. For example, menus generated in accordance with the invention can be used in the desktop computing environment in association with the operating system or application programs. One such use is to facilitate the creation of user personalized file structures for general desktop use. Another use is to facilitate the location of customized menus from master menus for use in association with application software to make the execution of the application software more efficient by, e.g., eliminating the necessity of querying or checking every tree branch in the master menu file structure in response to user input or other criteria and to create handheld/PDA compatible versions of the software.

While the preferred embodiment of the invention includes the selection of items from a master menu wherein the master menu is displayed using a graphical user interface, it is to be appreciated that any means for displaying the master menu to the user and generating another menu in response to and comprised of the selections made is encompassed by the contemplated invention. The invention encompasses the selection of nontextual symbols, characters, icons and the like, in addition to text, from a hierarchical tree menu or the like for generation of another menu comprised of such items.

It is also within the scope of the invention to generate menus automatically in response to predetermined criteria. For example, in the restaurant menu generation embodiment, a modified menu can be generated to comply with a particular specification or group of criteria such as, e.g., "dinner", "low cholesterol", "low fat", "fish",

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"chicken", or "vegetarian". In this embodiment, only items from the master menu that satisfy specified parameters will be included in the generated menu. The selection process could involve selection of master menu items based on tags or identifiers associated with the items or by checking every master menu item against a dictionary of items acceptable for inclusion in the modified menu. It should also be appreciated that the invention encompasses any combination of automatic and manual user selection of the items comprising the generated menu. For example, a user might specify criteria which would further control automatic selection or the user could manually select some items with automatic selection of others. The menu generation aspect of the invention is equally applicable to table-based, drive-thru, internet, telephone, wireless or other modes of customer order entry, as is the synchronous communications aspect of the invention.

The inventive concept encompasses the generation of a menu in any context known to those skilled in the art where an objective is to facilitate display of the menu so as to enable selection of items from that menu. The restaurant menu generation embodiment is but one example of a use for the inventive concept. Likewise, displaying menus generated in accordance with the invention on PDAs and Web pages to facilitate remote ordering are but a few examples of ways in which such a menu might be used in practice. Any display and transmission means known to those skilled in the art is equally usable with respect to menus generated in accordance with the claimed invention.

In the more general situation, menus can be generated in accordance with the present invention in a variety of situations. For example, the usable file structure for a particular data processing application can be dictated by the user or an application program prior to or during the execution of the application program. Efficiencies with respect to computational speed and equipment, e.g., storage and processor, usage can thus be achieved along with the facilitation of display of the generated menu.

While the best mode for carrying out the preferred embodiment of the invention has been illustrated and described in detail, those familiar with the art to which the invention relates will recognize various alternative designs and embodiments which fall within the spirit of practicing the invention. The appended claims are intended to cover all those changes and modifications falling within the true spirit and scope of the present invention.

That which is claimed is:

1. An information management and synchronous communications system for generating and transmitting menus comprising:

- a. a central processing unit,
- b. a data storage device connected to said central processing unit,
- c. an operating system including a graphical user interface,
- d. a first menu consisting of menu categories, said menu categories consisting of menu items, said first menu stored on said data storage device and displayable in a window of said graphical user interface in a hierarchical tree format,
- e. a modifier menu stored on said data storage device and displayable in a window of said graphical user interface,
- f. a sub-modifier menu stored on said data storage device and displayable in a window of said graphical user interface, and

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g. application software for generating a second menu from said first menu and transmitting said second menu to a wireless handheld computing device or Web page, wherein the application software facilitates the generation of the second menu by allowing selection of categories and items from the first menu, addition of menu categories to the second menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system, said parameters being selected from the modifier and sub-modifier menus.

2. An information management and synchronous communications system in accordance with claim 1, wherein the second menu is a restaurant menu.

3. An information management and synchronous communications system in accordance with claim 1, wherein the second menu is capable of being displayed on the display screen of a wireless computing device.

4. An information management and synchronous communications system in accordance with claim 3, wherein selections from the second menu are capable of being transmitted to a receiving computer by wireless link.

5. An information management and synchronous communications system in accordance with claim 3, wherein selections from the second menu are capable of being transmitted to a receiving computer via the internet.

6. An information management and synchronous communications system in accordance with claim 1, wherein the second menu is capable of being displayed on display screens of computers in a network.

7. An information management and synchronous communications system in accordance with claim 6, wherein the computer network is the internet.

8. An information management and synchronous communications system in accordance with claim 1, wherein the second menu is created in conformity with hypertext markup language or extensible markup language.

9. An information management and synchronous communications system in accordance with claim 1, wherein the second menu overwrites the first menu.

10. The information management and synchronous communications system of claim 1, wherein the first menu and the second menu are both capable of being displayed in the same window on the display screen.

11. The information management and synchronous communications system of claim 1, wherein the menu categories and items comprising the second menu are subsets, respectively, of the menu categories and items comprising the first menu.

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12. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

- a. a central database containing hospitality applications and data,
- b. at least one wireless handheld computing device on which hospitality applications and data are stored,
- c. at least one Web server on which hospitality applications and data are stored,
- d. at least one Web page on which hospitality applications and data are stored,
- e. an application program interface, and
- f. a communications control module,

wherein applications and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page; wherein the application program interface enables intergration of outside applications with the hospitality applications and wherein the communications control module is an interface between the hospitality applications and any other communications protocol.

13. The information management and synchronous communications system of claim 12 wherein the communications control module provides a single point of entry for all hospitality applications and wherein the single point of entry allows the synchronization of at least one wireless handheld computing device and at least one Web page with the central database so that at least one handheld device, at least one Web page and central database are consistent.

14. The information management and synchronous communications system of claim 13 wherein information entered on at least one Web page and transmitted over the internet is automatically communicated to the central database and at least one wireless handheld computing device.

15. The information management and synchronous communications system of claim 13 wherein information entered on at least one wireless handheld computing device is automatically communicated to the central database and at least one Web page.

16. The information management and synchronous communications system of claim 12 wherein the applications and data are synchronized by digital data transmission between the central database, at least one wireless handheld computing device, at least one Web server and at least one Web page.

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McNally et al.

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(45) **Date of Patent:** ***Mar. 22, 2005**

(54) **INFORMATION MANAGEMENT AND
SYNCHRONOUS COMMUNICATIONS
SYSTEM WITH MENU GENERATION**

6,107,944 A 8/2000 Behr et al.

FOREIGN PATENT DOCUMENTS

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This patent is subject to a terminal dis-
claimer.

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(63) Continuation of application No. 09/400,413, filed on Sep.
21, 1999, now Pat. No. 6,384,850.

(51) **Int. Cl.**⁷ **G06F 3/00**

(52) **U.S. Cl.** **715/810; 715/841**

(58) **Field of Search** 715/810, 841,
715/765, 781; 705/26, 27, 37

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(57) **ABSTRACT**

An information management and synchronous communica-
tions system and method facilitates database equilibrium and
synchronization with wired, wireless and Web-based
systems, user-friendly and efficient generation of computer-
ized menus and reservations for restaurant and other appli-
cations that utilize equipment with nonstandard graphical
formats, display size and application for use in remote data
entry, information management and communication with
host computer, digital input device or remote pager via
standard hardwired connection, the internet, a wireless link.

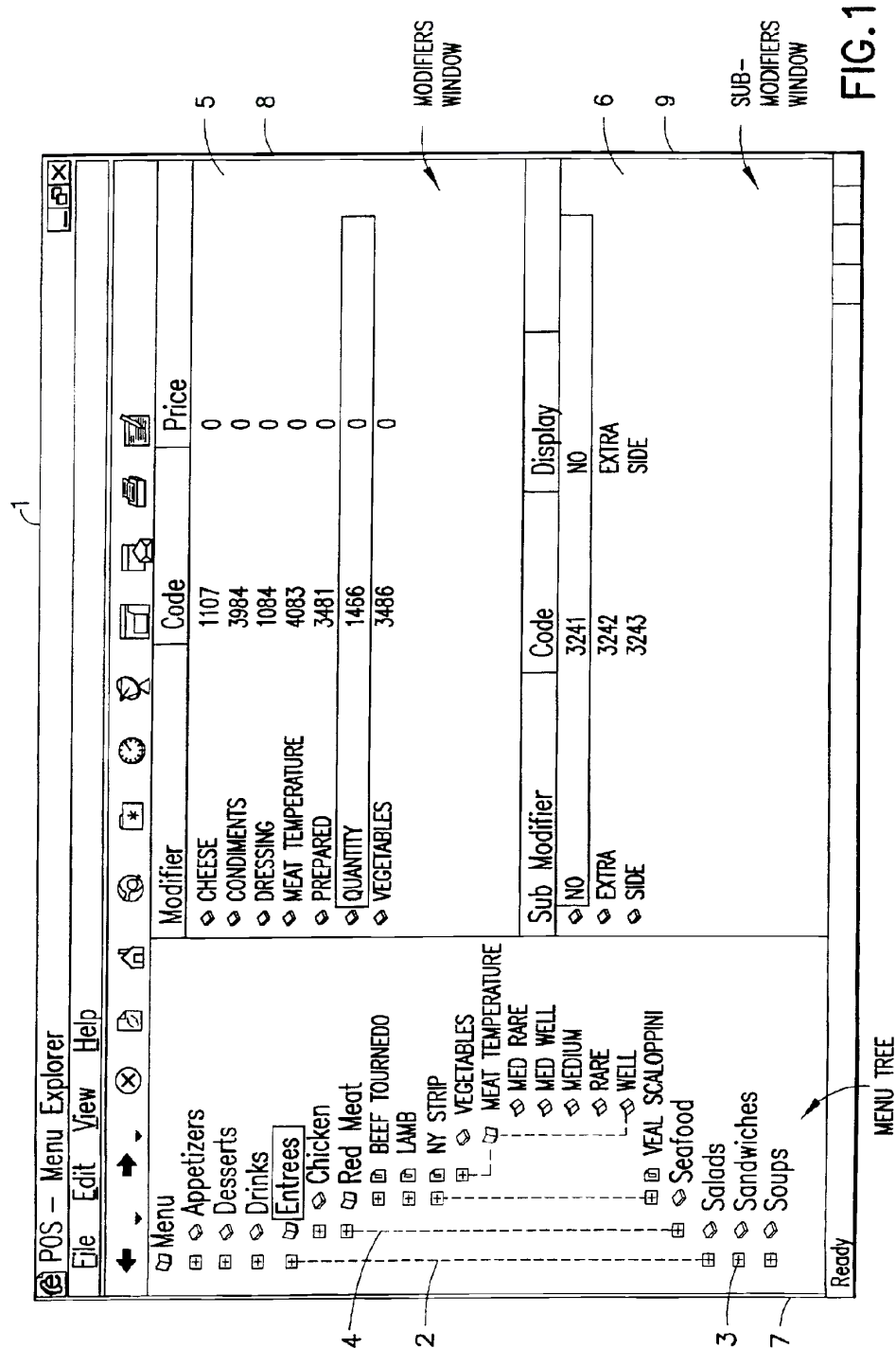
15 Claims, 6 Drawing Sheets

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Modifier

Long Name:

Short Name:

Code:

Price:

OK Cancel Browse

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FIG. 2

Menu Category

Long Name:

Short Name:

OK Cancel Browse

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FIG. 3

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Menu Item

Long Name: Chicken Alaska

Code: 5612

Short Name: ChxAls

Price: 12.95

Prep. Time: 12

Recipe

Flame broiled brandy marinated Tender Chicken Breast topped with a creamy cilantro sauce. Served with steamed broccoli, carrots and zucchini. Spices include lemon pepper, paprika, ginger.

OK Cancel Browse

FIG.4

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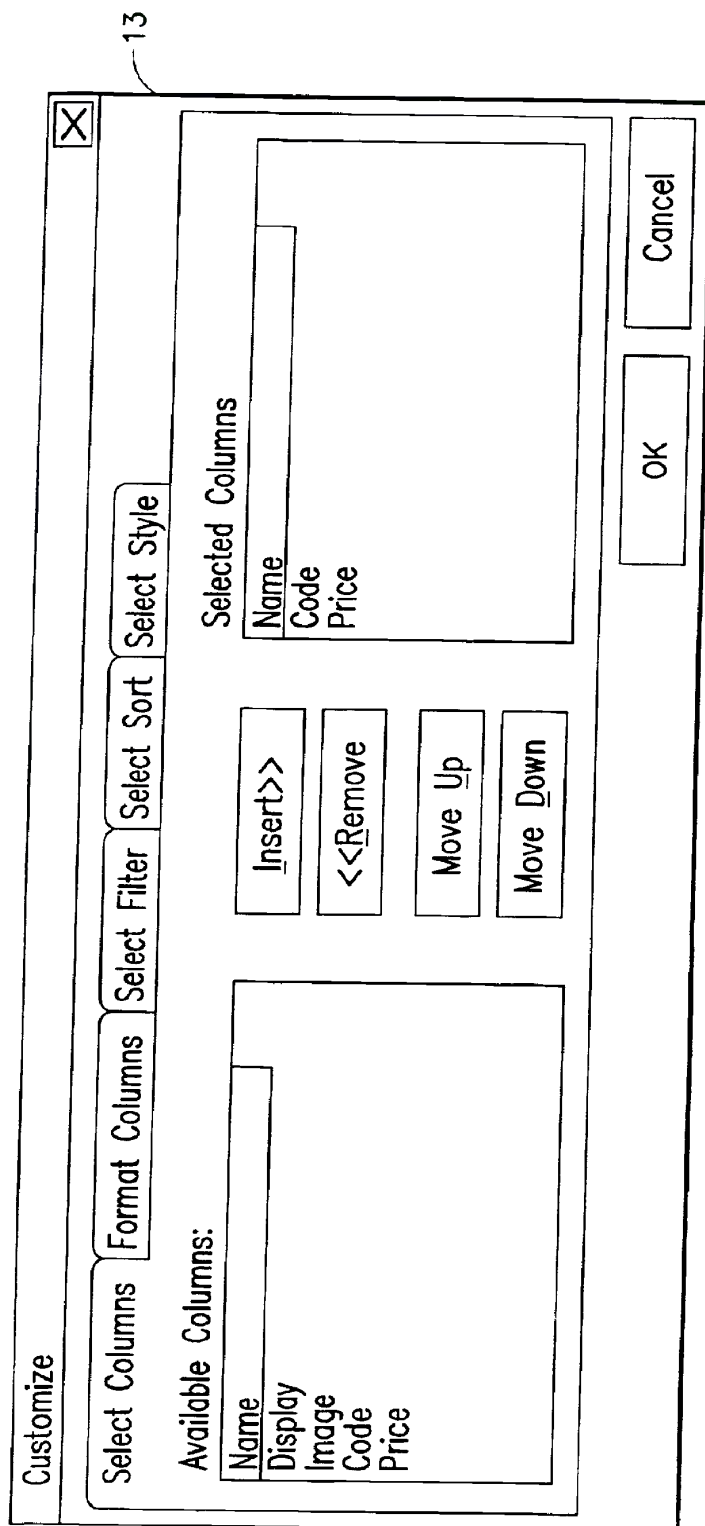


FIG. 5

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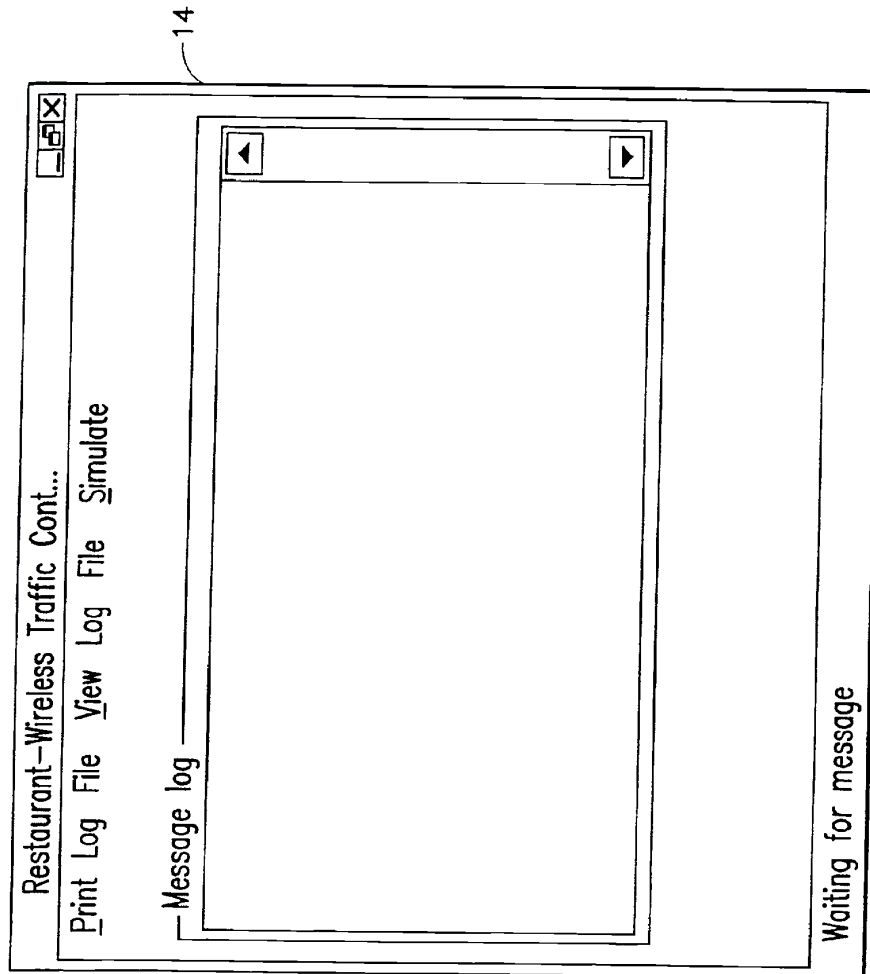


FIG. 6

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POScce-System

Login CHECKS ORDER VIEW PAY

Choose Item: Tbl67 5st 2

App	Dessert	Drinks	Entrees
Salads	Sdwch	Soups	

Direction:

MAIN	PREV	PAGE	MODS
------	------	------	------

Select Guest to Order for:

1	2	
---	---	--

Last Selection

	REMOVE LAST
--	-------------

OK Cancel Browse

15

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FIG. 7

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INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS SYSTEM WITH MENU GENERATION

The present application is a continuation of application Ser. No. 09/400,413, filed Sep. 21, 1999 U.S. Pat. No. 6,384,850. The contents of application Ser. No. 09/400,413 are incorporated herein by reference.

FIELD OF THE INVENTION

This invention relates to an information management and synchronous communications system and method for generation of computerized menus for restaurants and other applications with specialized display and synchronous communications requirements related to, for example, the use of equipment or software with non-PC-standard graphical formats, display sizes and/or applications for use in remote data entry, information management and synchronous communication between host computer, digital input device or remote pager via standard hardwired connection, the internet, a wireless link, smart phone or the like.

BACKGROUND OF THE INVENTION

While computers have dramatically altered many aspects of modern life, pen and paper have prevailed in the hospitality industry, e.g., for restaurant ordering, reservations and wait-list management, because of their simplicity, ease of training and operational speed. For example, ordering prepared foods has historically been done verbally, either directly to a waiter or over the telephone, whereupon the placed order is recorded on paper by the recipient or instantly filled.

Although not previously adapted for wide-scale use in the hospitality industry, various forms of digital wireless communication devices are in common use, e.g., digital wireless messengers and pagers. Also in common use are portable laptop and handheld devices. However, user-friendly information management and communication capability not requiring extensive computer expertise has not heretofore been available for use in everyday life such as for restaurant ordering, reservations and wait-list management. Hundreds of millions of dollars have been spent on personal digital assistant ("PDA") development seeking to produce a small, light-weight and inexpensive device that could be adapted to such uses; yet none have yielded a satisfactory solution.

One of the inherent shortcomings of PDA type devices is that, as they strive for small size, low weight and low cost, they must compromise the size and clarity of the operator display medium interface itself, which in most cases is one of a variety of LCD (liquid crystal display) type devices. As the size of the display shrinks, the amount of information that may be displayed at any one point or time is commensurately decreased, typically requiring multiple screens and displays to display information to the operator. This reduces the overall utility of the device. Additionally, the smaller display and keyboard results in a non-optimal operator interface, which slows down operation and is thus unacceptable for the time criticality of ordering, reservation and wait-list management and other similar applications. This necessitates many design compromises which in the aggregate have resulted in limited acceptance of PDA type devices in the restaurant and hospitality fields.

Many of the negatives prevalent in earlier devices have been eliminated, but, to date, there is still no integrated solution to the ordering/waitlist/reservation problem discussed above. With the advent of the Palm® and other

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handheld wireless devices, however, the efforts to make such devices ubiquitous have begun to bear fruit at least in some areas, e.g., personal calendars. However, substantial use of such devices in the restaurant and hospitality context has not occurred to date. As discussed above, at least one of the reasons PDAs have not been quickly assimilated into the restaurant and hospitality industries is that their small display sizes are not readily amenable to display of menus as they are commonly printed on paper or displayed on, e.g., large, color desktop computer screens. Another reason is that software for fully realizing the potential for wireless handheld computing devices has not previously been available. Such features would include fast and automatic synchronization between a central database and multiple handheld devices, synchronization and communication between a World Wide Web ("Web") server and multiple handheld devices, a well-defined application program interface ("API") that enables third parties such as point of sale ("POS") companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database. A single point of entry for all hospitality applications to communicate with one another wirelessly has also previously been unavailable. Such a single point of entry would work to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online would be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices would be reflected instantaneously on the backoffice server, Web pages and the other handheld devices.

For the foregoing reasons, paper-based ordering, waitlist and reservations management have persisted in the face of widespread computerization in practically all areas of commerce. At most, computerization of these functions has been largely limited to fixed computer solutions, i.e., desktop or mainframe, because of the problems heretofore faced in configuring wireless handheld devices and maintaining database synchronization for such applications. Specifically, the unavailability of any simple technique for creating restaurant menus and the like for use in a limited display area wireless handheld device or that is compatible with ordering over the internet has prevented widespread adoption of computerization in the hospitality industry. Without a viable solution for this problem, organizations have not made the efforts or investments to establish automated interfaces to handheld and Web site menus and ordering options.

A principal object of the present invention is to provide an improved information management and synchronous communications system and method which facilitates user-friendly and efficient generation of computerized menus for restaurants and other applications that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.

A further object of the present invention is to provide an improved information management and synchronous communications system and method which provides for entry, management and communication of information from the operator as well as to and from another computer, Web page menu, remote digital device using a standard hardwired connection, the internet or a wireless link.

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A further object of the present invention is to provide an improved information management and synchronous communications system which is small, affordable and lightweight yet incorporates a user-friendly operator interface and displays menus in a readily comprehensible format.

A further object of the present invention is to provide a synchronous information management and communications system which enables automatic updating of both wireless and internet menu systems when a new menu item is added, modified or deleted from any element of the system.

SUMMARY OF THE INVENTION

The foregoing and other objects of the present invention are provided by a synchronous information management and communications system and method optimized for simplicity of operation which incorporates menu generation for creation of menus to be used with wireless remote handheld computer and PDA devices, the internet or any application where simple and efficient generation of menus is appropriate. The menu generation approach of the present invention includes a desktop software application that enables the rapid creation and building of a menu and provides a means to instantly download the menu configuration onto, e.g., a handheld device or Web page and to seamlessly interface with standard point of sale ("POS") systems to enable automatic database updates and communication exchanges when a change or input occurs in any of the other system elements. To solve the above and other related problems, an information management and communications system is provided which results in a dramatic reduction in the amount of time, and hence cost, to generate and maintain computerized menus for, e.g., restaurants and other related applications that utilize non-PC-standard graphical formats, display sizes or applications.

The menu generation approach of the present invention has many advantages over previous approaches in solving the problem of converting paper-based menus or Windows® PC-based menu screens to small PDA-sized displays and Web pages. In one embodiment, the present invention is a software tool for building a menu, optimizing the process of how the menu can be downloaded to either a handheld device or Web page, and making manual or automatic modifications to the menu after initial creation.

The use of wireless handheld devices in the restaurant and hospitality industry is becoming increasingly pervasive as restaurant owners and managers become more aware of the benefits. With the proper wireless handheld system in place, restaurants can experience increased table turns from improved server productivity and shorter order taking and check paying times. Restaurants and POS companies seeking to provide a wireless handheld interface to their desktop-based POS systems or a Web page equivalent face several challenges. These challenges include building a menu using their existing database and transferring the menu onto handheld devices or Web pages that will interface with servers wirelessly or to restaurants/customers over the internet. The menu generation approach of the present invention is the first coherent solution available to accomplish these objectives easily and allows one development effort to produce both the handheld and Web page formats, link them with the existing POS systems, and thus provides a way to turn a complicated, time-consuming task into a simple process.

The information management and synchronous communications system of the present invention features include fast synchronization between a central database and multiple handheld devices, synchronization and communication

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between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The communication module also provides a single point of entry for all hospitality applications, e.g., reservations, frequent customer ticketing, wait lists, etc. to communicate with one another wirelessly and over the Web. This communication module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol and can be easily updated to work with a new communication protocol without modifying the core hospitality applications. A single point of entry works to keep all wireless handheld devices and linked web sites in synch with the backoffice server applications so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online can be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices are reflected instantaneously on the backoffice server Web pages and the other handheld devices.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing features and advantages of the present invention can be appreciated more fully from the following description, with references to the accompanying drawings in which:

FIG. 1 is a schematic representation of a window displayed on a computer display screen which shows a hierarchical tree menu, modifier window and sub-modifier window in conformity with a preferred embodiment of the present invention.

FIG. 2 is a schematic representation of a modifier dialog box in conformity with a preferred embodiment of the present invention.

FIG. 3 is a schematic representation of a menu category dialog box in conformity with a preferred embodiment of the present invention.

FIG. 4 is a schematic representation of a menu item dialog box in conformity with a preferred embodiment of the present invention.

FIG. 5 is a schematic representation of a display customization dialog box in conformity with a preferred embodiment of the present invention.

FIG. 6 is a schematic representation of a communications control window in conformity with a preferred embodiment of the present invention.

FIG. 7 is a schematic representation of a point of sale interface on a wireless handheld device for use in displaying page menus created in conformity with a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Most personal computers today run under an operating system that provides a graphical user interface ("GUI") for accessing user applications. A GUI is used in the preferred embodiment of the present invention. Through an interface

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of windows, pull-down menus, and toolbars, GUI operating systems have simplified PCs and have rendered computer technology more user friendly by eliminating the need to memorize keyboard entry sequences. In addition, GUIs allow users to manipulate their data as they would physical entities. For example, a window can represent a file and the contents of the window can represent the records of the file. The window can be opened, closed, or set aside on a desktop as if it were an actual object. The records of the file can be created, deleted, modified and arranged in a drag-and-drop fashion as if they also were physical objects. The most common GUI operating systems that provide this "object-oriented" environment for personal computers are Microsoft Windows® systems, including Windows CE® for handheld wireless devices and the like. Generally, a particular application program presents information to a user through a window of a GUI by drawing images, graphics or text within the window region. The user, in turn, communicates with the application by "pointing" at graphical objects in the window with a pointer that is controlled by a hand-operated pointing device, such as a mouse, or by pressing keys on a keyboard.

The use of menus is conventional in GUIs for software applications. Menus are typically utilized to provide end users of applications with available choices or processing options while using the applications. For example, in a typical desktop or interactive application, selection of a "file" from a menu bar may cause display of a context menu which provides "file" options. File options can have additional subordinate or child options associated with them. If a file option having subordinate options is selected, the child options are displayed in context in a child menu or submenu proximate to the selected parent option. One or more of the child options provided in the child menu may have further subordinate options. Thus, such a menu system comprises cascading sets of menus which are displayable in context to show the parent/child relationships between options of the context menu. A menu system of this type is incorporated into the preferred embodiment of the invention.

The preferred embodiment of the present invention uses typical hardware elements in the form of a computer workstation, operating system and application software elements which configure the hardware elements for operation in accordance with the present invention. A typical workstation platform includes hardware such as a central processing unit ("CPU"), e.g., a Pentium® microprocessor, RAM, ROM, hard drive storage in which are stored various system and application programs and data used within the workstation, modem, display screen, keyboard, mouse and optional removable storage devices such as floppy drive or a CD ROM drive. The workstation hardware is configured by software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including internet browsing software) and application software components. The preferred embodiment also encompasses a typical file server platform including hardware such as a CPU, e.g., Pentium® microprocessor, RAM, ROM, hard drive, modem, and optional removable storage devices, e.g., floppy or CD ROM drive. The server hardware is configured by software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including Web server software) and database software.

A computer workstation for use in the preferred embodiment also includes a GUI. As is conventional, the GUI is configured to present a graphical display on the display screen arranged to resemble a single desktop. Execution of an application program involves one or more user interface objects represented by windows and icons. Typically, there

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may be several windows and icons simultaneously present on the desktop and displaying information that is generated by different applications.

The window environment is generally part of the operating system software that includes a collection of utility programs for controlling the operation of the computer system. The computer system, in turn, interacts with application programs to provide higher level functionality, including a direct interface with the user. Specifically, the application programs make use of operating system functions by issuing task commands to the operating system which then performs the requested task. For example, an application program may request that the operating system display certain information on a window for presentation to the user.

An aspect of the preferred embodiment of the information management and communications system of the invention is shown in FIG. 1. FIG. 1 shows an example of the GUI provided by the operating system of the preferred embodiment of the present invention. With reference to FIG. 1, the preferred embodiment includes an intuitive GUI 1 from which to build a menu on a desktop or other computer. A hierarchical tree structure 2 is used to show the different relationships between the menu categories 3 (e.g., soups, salads, appetizers, entrees, deserts, etc.), menu items 4 (e.g., green salad, chicken caesar salad, etc.), menu modifiers 5 (e.g., dressing, meat temperature, condiments, etc.) and menu sub-modifiers 6 (e.g., Italian, French, ranch, bleu cheese, etc.).

The procedure followed in configuring a menu on the desktop PC and then downloading the menu configuration onto the POS interface on the handheld device in conformance with the preferred embodiment is as follows.

The menu configuration application is launched by clicking on the appropriate icon on the desktop display screen. FIG. 1 will then be displayed. There are three windows on the screen shown in FIG. 1. The left window is the menu tree 7, also called the tree view. The top right window is the Modifiers window 8 and the bottom right window is the Sub-Modifiers window 9. The Sub-Modifiers window lists the sub-modifiers that correspond to the modifier that is selected. The views on the right are referred to as list views. There are several ways of invoking a command, including using the menu options; using the context menu (right mouse click); using the keyboard or using the toolbar icons. For example, if it is desired to add a category to the menu, the following four options are available: (1) clicking on Edit, Add Category; (2) right mouse clicking on Menu, then clicking on Add Category; (3) highlighting Menu, then typing Ctrl+T or (4) clicking on the Add Category icon on the toolbar. To add an item to a category, the following options are available: (1) highlighting the category to which it is desired to add an item and then clicking on Edit>Add Item; (2) right mouse clicking on the desired category and then clicking on Add Item; (3) highlighting the desired category, then typing Ctrl+N or (4) clicking on the Add icon on the toolbar.

When building a menu, it should be kept in mind that the menu items are stored using a tree metaphor similar to how files are stored on a PC with folders and subfolders. The menu structure is similar to the Windows® File Explorer in the way the items are organized hierarchically. Below is an example of how an item may be configured:

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Menu
>> Entrees
    >> Red Meat
        >> NY Strip
            >> Vegetables
                >> Tomato
                >> Lettuce
            Meat Temperature
                >> Medium Rare

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In the above example, Menu is the root. Entrees is a menu category. Red Meat is an Entree category. NY Strip is a modifier. Vegetable is a modifier. Meat Temperature is a modifier. Medium Rare is a sub-modifier of Meat Temperature.

The steps taken in building a menu are as follows:

1. Add Modifiers;
2. Add Sub-Modifiers and link them to the Modifiers;
3. Create Menu categories;
4. Add menu items to the categories;
5. Assign Modifiers to the menu items;
6. Preview the menu on the POS emulator on the desktop PC;
7. Download the menu database to the handheld device.

To add modifiers, a user clicks on the inside of the Modifiers window, then (1) clicks on Edit>Add Modifier; (2) Presses Ctrl+N; (3) right mouse clicks in the Modifiers window, then clicks on Add Modifiers or (4) clicks on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in the Modifier dialog box 10 shown in FIG. 2. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and "OK" is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item as a modifier. To delete a modifier, the modifier is selected and the Delete key pressed on the keyboard. To edit a modifier, either the modifier is double clicked or the Enter key is pressed.

Sub-modifiers represent the last level of modifiers that can be assigned to a menu tree. To add sub-modifiers, the modifier to which sub-modifiers are to be assigned is selected. Then, the focus is set on the sub-modifier window by clicking inside the Sub-Modifier window as follows: (1) clicking on Edit>Add Sub-Modifier; (2) pressing Ctrl+N; (3) right mouse clicking in the Sub-Modifiers window, then clicking on Add Sub-Modifiers or (4) clicking on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in a Sub-Modifier dialog box similar to the Modifier dialog box shown in FIG. 2. As with modifiers, the Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. As before, if there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK clicked. The

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fields will then be filled with the information from the database. Clicking on OK again will add the item as a sub-modifier. To delete a sub-modifier, the sub-modifier is selected and the Delete key depressed on the keyboard. To edit a sub-modifier, either the sub-modifier is double clicked or the Enter key is pressed.

Menu categories are created from the root. Some examples of categories are Appetizers, Soups, Salads, Entrees, Desserts, etc. The first step is to click on Menu in the menu tree window. Categories are added by (1) clicking on the Add Category icon from the toolbar; (2) clicking on Edit>Add Category or (3) pressing Ctrl+T. As shown in FIG. 3, Menu Category dialog box 11 then appears in which to enter the Long and Short names for the menu category.

To add menu items to categories, the menu category which is being built is clicked. For example, if items are being added to Appetizers, the Appetizers branch is clicked on. Then the Edit>Add Item is clicked on or Ctrl+N pressed. As before, if a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code, Prep Time, Recipe and Price into the Menu Item dialog box 12 shown in FIG. 4. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. Prep Time is the time it takes to prepare the meal and Recipe would include preparation methods and ingredients that are used in the preparation of the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item to the category.

Once the menu items have been entered, it may be desired to assign some modifiers to the menu items. For example, it may be desired to assign meat temperature to a steak order. To accomplish this, first the modifier to be assigned is selected, then the menu item on the tree view that is to be assigned the modifier is clicked on and then Edit>Assign Modifier is clicked on. Or, the modifier can simply be dragged and dropped onto the menu item to link them. A dialog box is then displayed asking if this modifier is a required modifier. If it is a required modifier, the display icon will be red but if it is a non-required modifier the display icon will be green. As many modifiers as are applicable can be assigned. If any changes are made to the modifiers, those changes will be automatically reflected throughout the menu tree.

Once the modifiers have been entered, it may be desired to assign sub-modifiers to the modifiers items. For example, it may be desired to add Honey Mustard as a sub-modifier to Dressing. To accomplish this, first the modifier to be assigned a sub-modifier is selected, then the sub-modifier window is clicked on, then Edit>Add Sub Modifier is clicked on, Ctrl+N entered or the Add icon from the toolbar is clicked on. Or, the sub-modifier can simply be dragged and dropped onto the modifier to link them.

When the menu has been completely configured, it can be previewed on a POS emulator on the desktop to verify that the menu is correctly configured before downloading it to the handheld device. To preview, File>Preview Database is clicked on or the Preview Database icon from the toolbar is clicked on. The handheld POS emulator on the desktop can then be run. If the configuration is deemed acceptable, the handheld device is connected to the desktop PC to ensure that a connection has been established; the POS application

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on the handheld device is exited and File>Download Database is clicked on or the Download Database icon from the toolbar is clicked on. If there is an existing menu database on the handheld device, the system will ask if the existing database should be replaced. Yes is clicked if existing database replacement is desired.

A database function enables the creation of, e.g., a breakfast menu, lunch menu and dinner menu and downloading them to a handheld device. Functions available are (1) creating a new database; (2) opening an existing database; (3) saving a database under a different name. To access these functions, File is clicked on the menu bar.

The preferred embodiment encompasses customized layout, views and fonts. To set the focus on the view it is desired to change, click inside the desired window. The main customizing dialog box is accessed by clicking on View>Customize View. A dialog box 13, as shown in FIG. 5, will be displayed including tabs that allow the following options: selection of Columns to display in the list view by choosing and arranging the fields to display in the Modifiers and Sub-Modifiers windows; formatting Columns by specifying the column widths and justification; selecting Filter allows restricting the list to display only the items that meet certain criteria. For example, display of modifiers with codes between 500 and 550. Selecting Sort allows sorting the modifiers or sub-modifiers according to any of the available fields such as Name, Code or Price. Selecting Style facilitates choice of font type, style, size, etc. To change the font in a particular window, click on View>Fonts or right mouse click on the desired window and then click on Fonts. To change the size of the windows, drag the borders of the windows to expand or contract the size of the windows. To change the column widths, simply drag the edge of the column headers to increase or decrease the column widths.

A communications control program monitors and routes all communications to the appropriate devices. It continuously monitors the wireless network access point and all other devices connected to the network such as pagers, remote devices, internet Web links and POS software. Any message received is decoded by the software, and then routed to the appropriate device. No user action is needed during operation of the software once the application has been launched. To launch the communications control module, a Wireless Traffic icon is clicked on the desktop PC. When the program loads, the screen shown in FIG. 6 appears. Messages received are logged in the window 14 shown in FIG. 6 with a time stamp. The messages are also logged to a file on the hard drive. This provides a mechanism to monitor all traffic across the network (possibly useful for troubleshooting, or maintenance, but not necessary for normal operation). The program may be minimized so the screen is not displayed on the desktop, but it must be running for proper communications to exist between all devices on the network.

As stated, the preferred embodiment of the present invention includes the use of and compatibility with GUI technology. A drag-and-drop approach is used for organizing the tree structure 2 in the generated menu. Drag-and-drop is also used for assigning modifiers (modifiers can be dragged from the modifiers window 5 and dropped onto the menu item 4 for assignment). In-cell editing results in fast editing of items in building the menus. Customizable fonts enable users to change font types, style and size. Customizable layouts enable users to resize windows, change icons and display preferences. The inventive approach provides for fully persistent storage between sessions, even if a session is improperly or abruptly terminated. Font and the tree state

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(i.e., which nodes are expanded/collapsed) are stored between sessions. Layout for modifiers and sub-modifiers list views (filter, columns, formatting, font, etc.) are stored between sessions. The last database used is likewise stored between sessions. Splitter views allow the user to see different views at the same time. Each view is displayed on its own section of the screen. Views can be resized via the keyboard or a mouse by simply dragging the splitter in the middle.

An automated function is provided to import existing POS databases into the inventive menu generation system and, as discussed above with respect to the detailed example of how to use the preferred embodiment, an automated download procedure is provided to transfer the desktop database onto a handheld device and/or Web page. Also as discussed, the preferred embodiment facilitates preview of the handheld device or Web page version of the POS menu on the desktop before downloading and configuration. Customizable desktop menu generation is contemplated, as discussed above, in the form of customizable fonts, columns, layouts, etc. The inventive approach also includes templates for common modifiers that can be assigned to similar menu items. The preferred embodiment also supports multiple databases, thus providing for the creation and storing of different menu databases on handheld devices such as breakfast, lunch or dinner menus. The user can then select the appropriate database to reflect the time of day.

FIG. 7 is a schematic representation of a point of sale interface 15 for use in displaying a page-type menu 16 created using the inventive menu generation approach. As can be seen from FIG. 7, the page menu is displayed in a catalogue-like point-and-click format whereas the master menu, FIG. 1, is displayed as a hierarchical tree structure. Thus, a person with little expertise can "page through" to complete a transaction with the POS interface and avoid having to review the entire menu of FIG. 1 to place an order. A PDA or Web page format could appear like FIG. 7 or the display could be configured for particular requirements since fully customizable menu generation and display are contemplated.

The POS interface on the handheld device supports pricing in the database or querying prices from the POS server. The POS device also can be customized with respect to "look and feel" for the particular version. As can be seen in FIG. 7, the POS interface provides for billing, status and payment with respect to orders. A myriad of options can be provided depending on the application.

Advanced database functions are provided in the preferred embodiment of the invention, including an automated download process onto handheld devices and/or Web sites. In the preferred embodiment, the menu generation system of the present invention uses an API called ActiveX Data Objects ("ADO") for database access. ADO is useful in a variety of settings. It is built on top of OLE DB and can be used to talk to databases and, in the future, any data source with any OLE DB driver. Advanced querying is supported. The database can be queried on virtually all fields. Queries can be built using SQL syntax for experienced users or can be created using a query builder which guides users through the creating process. Advanced error handling is supported. Errors occurring at run time can be trapped. A descriptive message is displayed to alert the user and provide error information. However, the application does not terminate when the errors happen. The source code is easy to maintain and modify, thus allowing for on time delivery of customized versions of the software. The advanced database functions produce well-designed databases that accommodate growth and scalability

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The inventive menu generation approach provides a solution for the pervasive connectivity and computerization needs of the restaurant and related markets. The inventive solution includes automatic database management and synchronization, PDA and handheld wireless operating system integration and optimization, wireless communications and internet connectivity, user interface design, and graphics design.

In the preferred embodiment, the menu generation approach of the present invention uses Windows CE® as the operating system for the handheld devices. Windows CE® provides the benefits of a familiar Windows 95/98/NT® look and feel, built-in synchronization between handheld devices, internet and desktop infrastructure, compatibility with Microsoft Exchange®, Microsoft Office 9® and TCP/IP quick access to information with instant-on feature.

Windows CE® provides a basic set of database and communication tools for developer use. However, interfacing with these tools to provide application specific results can be a complex task. In addition to the menu generation described above, a set of software libraries described herein in conformance with the present invention not only enhances the basic Windows CE® functionality by adding new features but also maximizes the full potential of wireless handheld computing devices. Such features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The synchronous communications control module discussed above provides a single point of entry for all hospitality applications to communicate with one another wirelessly or over the Web. This communications module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol. This layer can be easily updated to work with a new communication protocol without having to modify the core hospitality applications. The single point of entry works to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online is automatically communicated to the backoffice server which then synchronizes with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices will be reflected instantaneously on the backoffice server and the other handheld devices.

The software applications for performing the functions falling within the described invention can be written in any commonly used computer language. The discrete programming steps are commonly known and thus programming details are not necessary to a full description of the invention.

A simple point-to-point wireless capability is contemplated which permits simple digital messages to be sent from the wireless handheld devices to a receiver in a beeper and/or valet parking base-station. The POS interface of FIG. 7 is representative of the display on a typical wireless device used in conformity with the invention. A simple protocol is

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used to acknowledge receipt of the message and thus simultaneous communication is not necessary, which reduces the cost of the wireless link. The range of the wireless link is determined by the characteristics of the radio transceiver. Adding a wireless link allows paging of beeper equipped customers directly from the operator interface on the wireless handheld devices and communication to and from various input/output transmitters and receivers to update the status of the order, reservation or other information and thus further reduce the workload on the operator and enable operations to proceed much faster. This link could also be hardwired or otherwise implemented using any two-way messaging transport.

A further aspect of the invention is the use of the menus generated in accordance with the described technique to place orders from wireless remote handheld devices or from remote locations through the internet. The World Wide Web is a distributed hypermedia computer system that uses the internet to facilitate global hypermedia communication using specified protocols. One such protocol is the Hypertext Transfer Protocol ("HTTP"), which facilitates communication of hypertext. Hypertext is the combination of information and links to other information. In the context of the Web, hypertext is defined by the Hypertext Mark-up Language ("HTML"). The links or hyperlinks in a HTML document reference the locations of resources on the Web, such as other HTML documents. Another language used in creating documents for use on the Worldwide Web, to display on computer screens, or to create speech style sheets for use in, e.g., telephones, is the Extensible Mark-Up Language ("XML"). XML is a "metalanguage", i.e., a language for describing languages which was developed to eliminate the restrictions of HTML.

The Web is a client-server system. The HTML documents are stored on Web server computers, typically in a hierarchical fashion with the root document being referred to as the home page. The client specifies a HTML document or other source on the server by transmitting a Uniform Resource Locator ("URL") which specifies the protocol to use, e.g., HTTP, the path to the server directory in which the resource is located, and filename of the resource. Users retrieve the documents via client computers. The software running on the user's client computer that enables the user to view HTML documents on the computer's video monitor and enter selections using the computer's keyboard and mouse is known as a browser. The browser typically includes a window in which the user may type a URL. A user may cause a URL to be transmitted by typing it in the designated window on the browser or by maneuvering the cursor to a position on the displayed document that corresponds to a hyperlink to a resource and actuating the mouse button. The latter method is commonly referred to simply as "clicking on the hot-spot" or "clicking on the hyperlink". The hyperlink methodology is contemplated for use in accordance with the preferred embodiment to transmit orders via the internet.

Web server application software exists that enables a user to shop for and order merchandise. Such systems are sometimes referred to as electronic merchandising systems or virtual storefronts. Systems that enable a user to choose among several retailers' goods are sometimes referred to as electronic malls. An electronic retailer's or electronic mall operator's Web server provides HTML forms that include images and descriptions of merchandise. The user may conventionally search for an item by entering a key word search query in a box on a form. When a user selects an item, the server may provide a linked form that describes that item

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in further detail. The user may also conventionally enter ordering information into boxes on the form, such as the type and quantity of the item desired. The information entered by the user is transmitted to the server. The user may select multiple items in this manner and then enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer. As can be appreciated, ordering merchandise can also be done from menus. The generation of menus of items or merchandise for sale over the internet is readily accomplished by the menu generation approach of the present invention.

Searching for items that the user is interested in purchasing is insufficient in prior merchandising systems. Database management programs use index searching to facilitate rapid searching of large amounts of data. The creator of the database may instruct the program to use specified fields in the database as indexed or key fields. The program locates all terms in the database that appear in the indexed fields and stores them in an index table. Each entry in the index table includes a term and corresponding pointer to the location in the database where the term is found. If a user initiates a search for a term that is present in the index table, the program can locate the instances of that term in the database with exceptional speed. Users who are familiar with the particular database they are searching will generally know which fields are indexed and will know the format of the data in those fields. For example, a user of a database containing the inventory of a bookstore may know that users can search for the names of authors of books and that a user who wishes to do so should enter the author's last name first. A user having such knowledge will therefore be able to search efficiently. Users of electronic merchandising systems, however, are generally end-consumers who have no knowledge of a merchant's database. If, as is very likely, such a user initiates a search for a term that is not present in the index table, the program must sequentially search through all records in the database. Sequential records are typically linked by pointers. Using pointers in this manner is very demanding on server resources, resulting not only in an exceptionally slow search, but also creating a bottleneck for other processes that the server may be executing. The menu generation approach of the present invention can be used to create customized menus from a database that includes every item of merchandise the vendor has for sale. In this manner, customers can scan the generated menu much more readily than they could view the entire database and the necessity of having familiarity with the database is eliminated as well, reducing the need for resource intensive pointers.

While the preferred embodiment of the invention is for the generation of restaurant menus and the like, the broad scope of the invention is far greater. For example, menus generated in accordance with the invention can be used in the desktop computing environment in association with the operating system or application programs. One such use is to facilitate the creation of user personalized file structures for general desktop use. Another use is to facilitate the location of customized menus from master menus for use in association with application software to make the execution of the application software more efficient by, e.g., eliminating the necessity of querying or checking every tree branch in the master menu file structure in response to user input or other criteria and to create handheld/PDA compatible versions of the software.

While the preferred embodiment of the invention includes the selection of items from a master menu wherein the master menu is displayed using a graphical user interface, it

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is to be appreciated that any means for displaying the master menu to the user and generating another menu in response to and comprised of the selections made is encompassed by the contemplated invention. The invention encompasses the selection of nontextual symbols, characters, icons and the like, in addition to text, from a hierarchical tree menu or the like for generation of another menu comprised of such items.

It is also within the scope of the invention to generate menus automatically in response to predetermined criteria. For example, in the restaurant menu generation embodiment, a modified menu can be generated to comply with a particular specification or group of criteria such as, e.g., "dinner", "low cholesterol", "lowfat", "fish", "chicken", or "vegetarian". In this embodiment, only items from the master menu that satisfy specified parameters will be included in the generated menu. The selection process could involve selection of master menu items based on tags or identifiers associated with the items or by checking every master menu item against a dictionary of items acceptable for inclusion in the modified menu. It should also be appreciated that the invention encompasses any combination of automatic and manual user selection of the items comprising the generated menu. For example, a user might specify criteria which would further control automatic selection or the user could manually select some items with automatic selection of others. The menu generation aspect of the invention is equally applicable to table-based, drive-thru, internet, telephone, wireless or other modes of customer order entry, as is the synchronous communications aspect of the invention.

The inventive concept encompasses the generation of a menu in any context known to those skilled in the art where an objective is to facilitate display of the menu so as to enable selection of items from that menu. The restaurant menu generation embodiment is but one example of a use for the inventive concept. Likewise, displaying menus generated in accordance with the invention on PDAs and Web pages to facilitate remote ordering are but a few examples of ways in which such a menu might be used in practice. Any display and transmission means known to those skilled in the art is equally usable with respect to menus generated in accordance with the claimed invention.

In the more general situation, menus can be generated in accordance with the present invention in a variety of situations. For example, the usable file structure for a particular data processing application can be dictated by the user or an application program prior to or during the execution of the application program. Efficiencies with respect to computational speed and equipment, e.g., storage and processor, usage can thus be achieved along with the facilitation of display of the generated menu.

While the best mode for carrying out the preferred embodiment of the invention has been illustrated and described in detail, those familiar with the art to which the invention relates will recognize various alternative designs and embodiments which fall within the spirit of practicing the invention. The appended claims are intended to cover all those changes and modifications falling within the true spirit and scope of the present invention.

That which is claimed is:

1. An information management and synchronous communications system for generating and transmitting menus comprising:

- a. a central processing unit,
- b. a data storage device connected to said central processing unit,
- c. an operating system including a graphical user interface,

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d. a first menu consisting of menu categories, said menu categories consisting of menu items, said first menu stored on said data storage device and displayable in a window of said graphical user interface in a hierarchical tree format,

e. a modifier menu stored on said data storage device and displayable in a window of said graphical user interface,

f. a sub-modifier menu stored on said data storage device and displayable in a window of said graphical user interface, and

g. application software for generating a second menu from said first menu and transmitting said second menu to a wireless handheld computing device or Web page, wherein the application software facilitates the generation of the second menu by allowing selection of categories and items from the first menu, addition of menu categories to the second menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system, said parameters being selected from the modifier and sub-modifier menus, wherein said second menu to be applicable to a predetermined type of ordering.

2. The system of claim 1 wherein the type of ordering is table-based customer ordering.

3. The system of claim 1 wherein the type of ordering in drive-through customer ordering.

4. The system of claim 1 wherein the type of ordering is customer ordering via internet.

5. The system of claim 1 wherein the type of ordering is customer ordering via telephone.

6. The system of claim 1 wherein the type of ordering is customer ordering via wireless device.

7. An information management and synchronous communications system for generating and transmitting menus comprising:

a. a central processing unit,

b. a data storage device connected to said central processing unit,

c. an operating system including a graphical user interface,

d. a first menu consisting of menu categories, said menu categories consisting of menu items, said first menu stored on said data storage device and displayable in a window of said graphical user interface in a hierarchical tree format,

e. a modifier menu stored on said data storage device and displayable in a window of said graphical user interface,

f. a sub-modifier menu stored on said data storage device and displayable in a window of said graphical user interface, and

g. application software for generating a second menu from said first menu and transmitting said second menu to a wireless handheld computing device or Web page, wherein the application software facilitates the generation of the second menu by allowing selection of categories and items from the first menu, addition of menu categories to the second menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system, said parameters being selected from the modifier and sub-modifier menus, wherein said application software acts to facilitate generation of the second menu such that the second menu is appropriate for a specified time of day.

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8. An information management and synchronous communications system for generating and transmitting means comprising:

a. a central processing unit,

b. a data storage device connected to said central processing unit,

c. an operating system including a graphical user interface,

d. a first menu consisting of menu categories, said menu categories consisting of menu items, said first menu stored on said data storage device and displayable in a window of said graphical user interface in a hierarchical tree format,

e. a modifier menu stored on said data storage device and displayable in a window of said graphical user interface,

f. a sub-modifier menu stored on said data storage device and displayable in a window of said graphical user interface, and

g. application software for generating a second menu from said first menu and transmitting said second menu to a wireless handheld computing device or Web page, wherein the application software facilitates the generation of the second menu by allowing selection of categories and items from the first menu, addition of menu categories to the second menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system, said parameters being selected from the modifier and sub-modifier menus, wherein said application software further facilitates the generations of multiple menus, each of said multiple menus being appropriate for a particular time of day.

9. An information management and synchronous communications system for generating and transmitting menus comprising:

a. a central processing unit,

b. a data storage device connected to said central processing unit,

c. an operating system including a graphical user interface,

d. a first menu consisting of menu categories, said menu categories consisting of menu items, said first menu stored on said data storage device and displayable in a window of said graphical user interface in a hierarchical tree format,

e. a modifier menu stored on said data storage device and displayable in a window of said graphical user interface,

f. a sub-modifier menu stored on said data storage device and displayable in a window of said graphical user interface, and

g. application software for generating a second menu from said first menu and transmitting said second menu to a wireless handheld computing device or Web page, wherein the application software facilitates the generation of the second menu by allowing selection of categories and items from the first menu, addition of menu categories to the second menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system, said parameters being selected from the modifier and sub-modifier menus, wherein the facilitation of second menu generation by said application software takes into account specified parameters, such that the second menu so generated includes items that satisfy the specified parameters.

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10. The information management and synchronous communication system of claim 9 wherein said specified parameters involve recipe content.

11. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

- a. a central database containing hospitality applications and data,
- b. at least one wireless handheld computing device on which hospitality applications and data are stored,
- c. at least one Web server on which hospitality applications and data are stored,
- d. at least one Web page on which hospitality application and data are stored,
- e. an application program interface, and
- f. a communications control module,

wherein application and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page, wherein the application program interface enables integration of outside applications with the hospitality applications and wherein the communications control module is an interface between the hospitality applications and any other communications protocol, wherein the synchronized data relates to orders.

12. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

- a. a central database containing hospitality applications and data,
- b. at least one wireless handheld computing device on which hospitality applications and data are stored,
- c. at least one Web server on which hospitality applications and data are stored,
- d. at least one Web page on which hospitality application and data are stored,
- e. an application program interface, and
- f. a communications control module,

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wherein application and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page, wherein the application program interface enables integration of outside applications with the hospitality applications and wherein the communications control module is an interface between the hospitality applications and any other communications protocol, wherein the synchronized data relates to waitlists.

13. An information management and synchronous communications system for use with wireless handheld computing devices and the internet comprising:

- a. a central database containing hospitality applications and data,
- b. at least one wireless handheld computing device on which hospitality applications and data are stored,
- c. at least one Web server on which hospitality applications and data are stored,
- d. at least one Web page on which hospitality application and data are stored,
- e. an application program interface, and
- f. a communications control module,

wherein application and data are synchronized between the central data base, at least one wireless handheld computing device, at least one Web server and at least one Web page, wherein the application program interface enables integration of outside applications with the hospitality applications and wherein the communications control module is an interface between the hospitality applications and any other communications protocol, wherein the synchronized data relates to reservations.

14. The information management and synchronous communication system of claim 11, 12, or 13 wherein the data is sent to a receiver at a valet parking base station.

15. The information management and synchronous communication system of claim 11, 12, or 13 wherein the data is sent to a wireless paging device.

* * * * *



(12) **United States Patent**
McNally et al.

(10) **Patent No.: US 8,146,077 B2**

(45) **Date of Patent: Mar. 27, 2012**

(54) **INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS SYSTEM WITH MENU GENERATION, AND HANDWRITING AND VOICE MODIFICATION OF ORDERS**

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(58) **Field of Classification Search** 715/810-845
See application file for complete search history.

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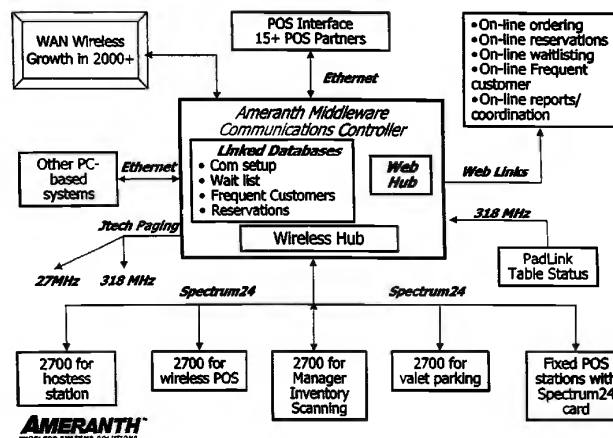
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(57) **ABSTRACT**

An information management and synchronous communications system and method facilitates database equilibrium and synchronization with wired, wireless and Web-based systems, user-friendly and efficient generation of computerized menus and reservations with handwritten/voice modifications for restaurants and other applications that utilize equipment with nonstandard graphical formats, display sizes and/or applications for use in remote data entry, information management and communication with host computer, digital input device or remote pager via standard hardwired connection, the internet, a wireless link, printer or the like.

18 Claims, 8 Drawing Sheets

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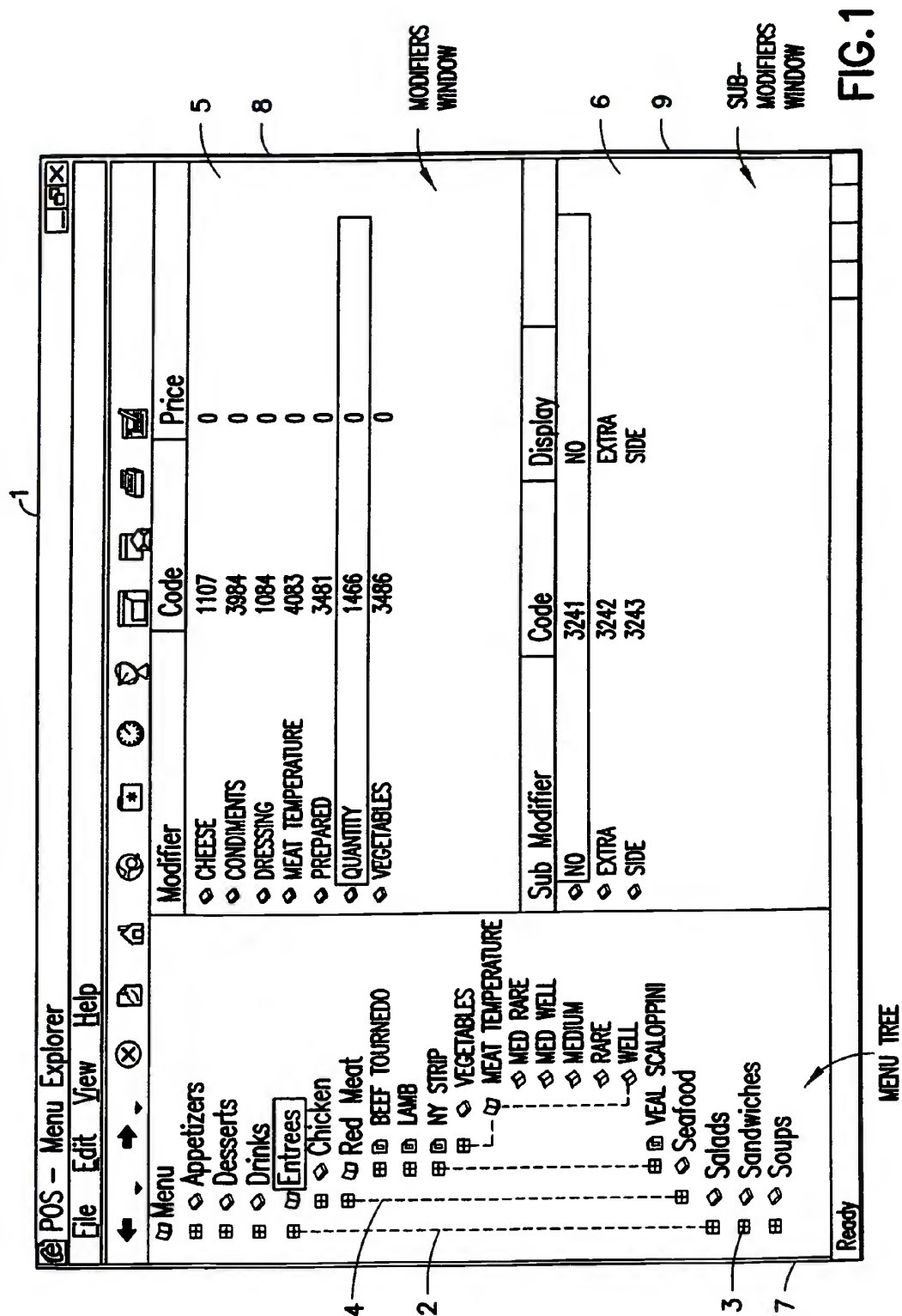
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Modifier

Long Name:

Short Name:

Code:

Price:

OK Cancel Browse

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FIG. 2

Menu Category

Long Name:

Short Name:

OK Cancel Browse

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FIG. 3

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Menu Item
X

Long Name:
Chicken Alaska

Short Name:
ChxAls

Code:
5612

Price:
12.95

Prep. Time:
12

Recipe

Flame broiled brandy marinated Tender Chicken Breast topped with a creamy cilantro sauce. Served with steamed broccoli, carrots and zucchini.
Spices include lemon pepper, paprika, ginger.

FIG. 4

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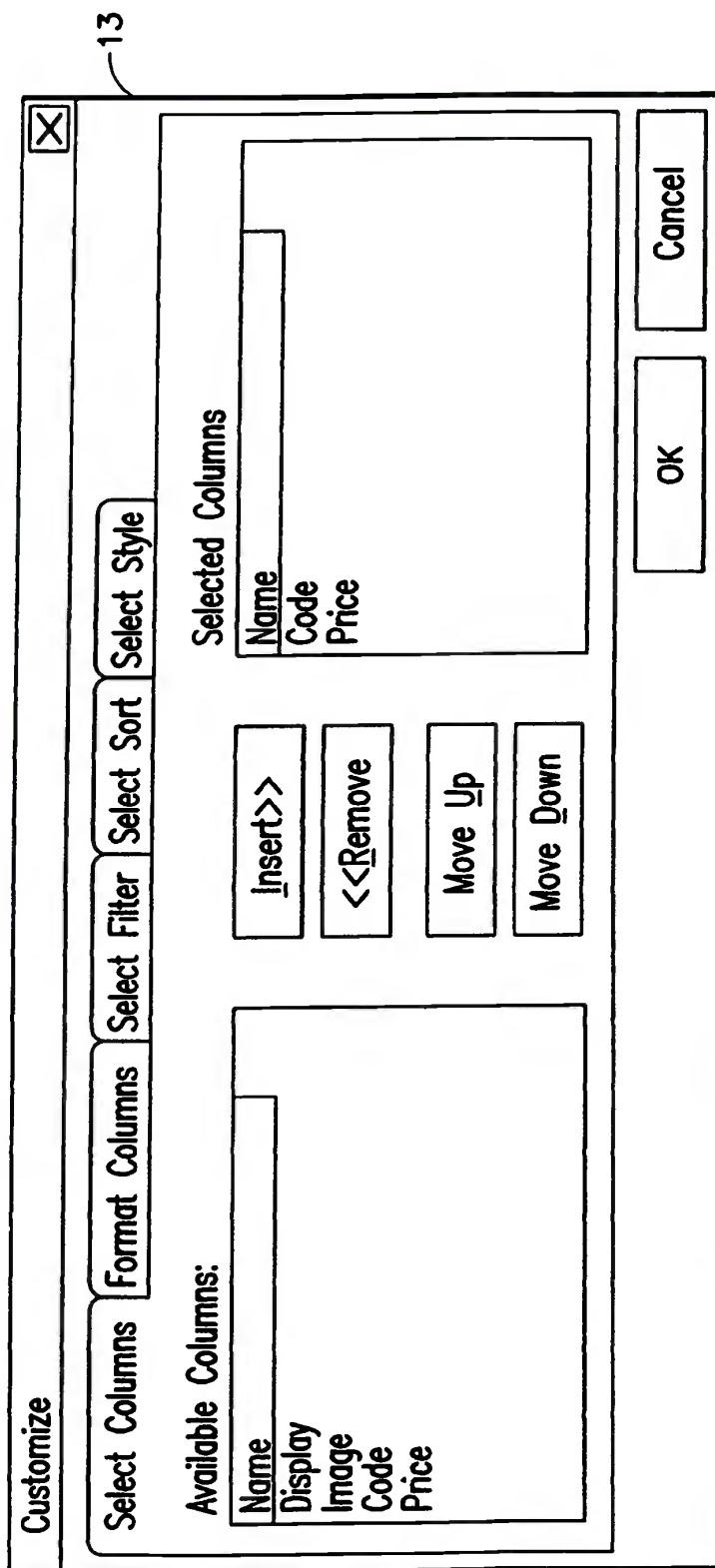


FIG.5

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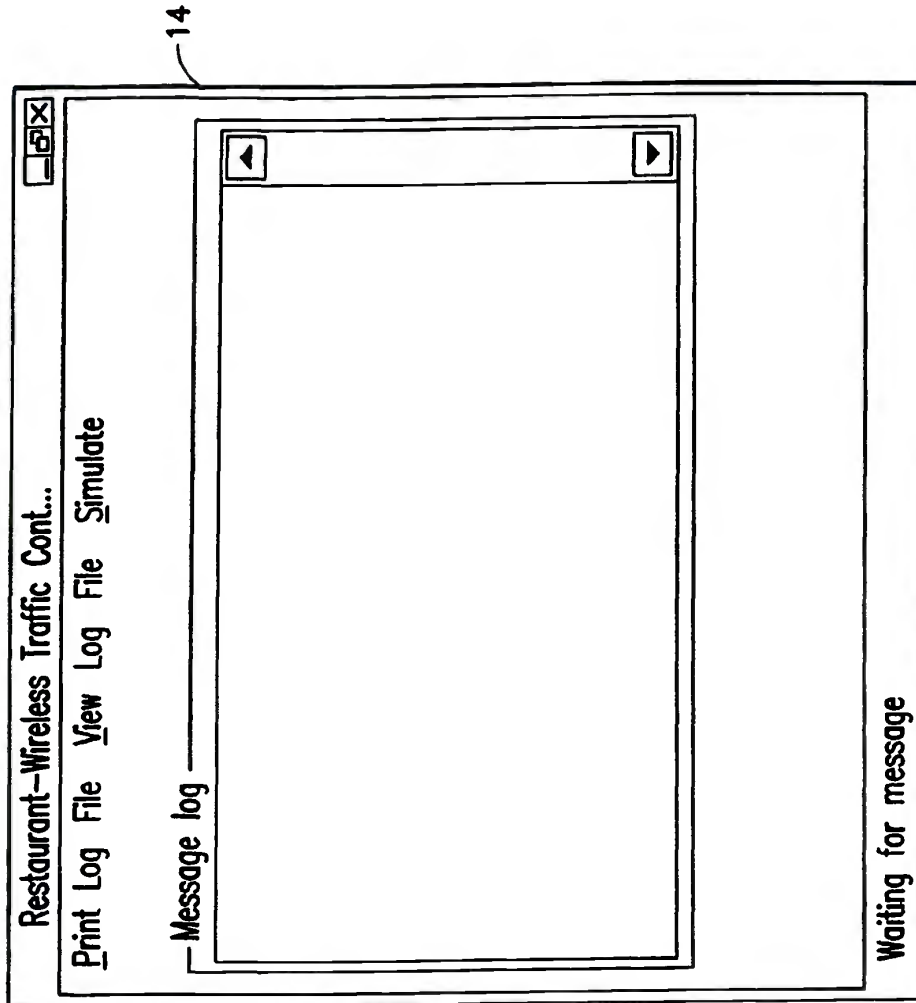


FIG. 6

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POSce-System

Login CHECKS ORDER VIEW PAY

Choose Item:

App	Dessert	Drinks	Entrees
Salads	Sdwch	Soups	

Direction:

MAIN	PREV	PAGE	MODS
------	------	------	------

Select Guest to Order for:

1	2	
---	---	--

Last Selection

REMOVE LAST

OK Cancel Browse

15 16

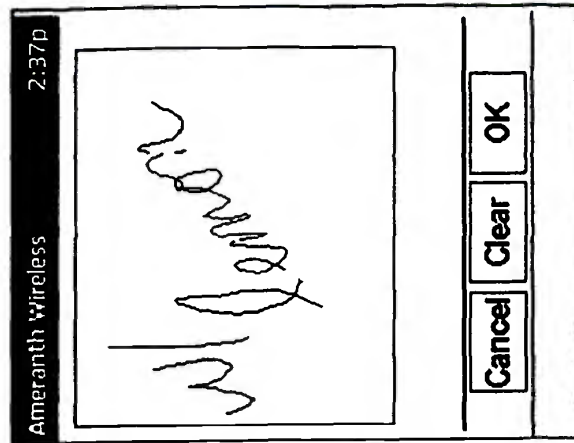
FIG. 7

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This is an example of the ordering
"Literal Screen".

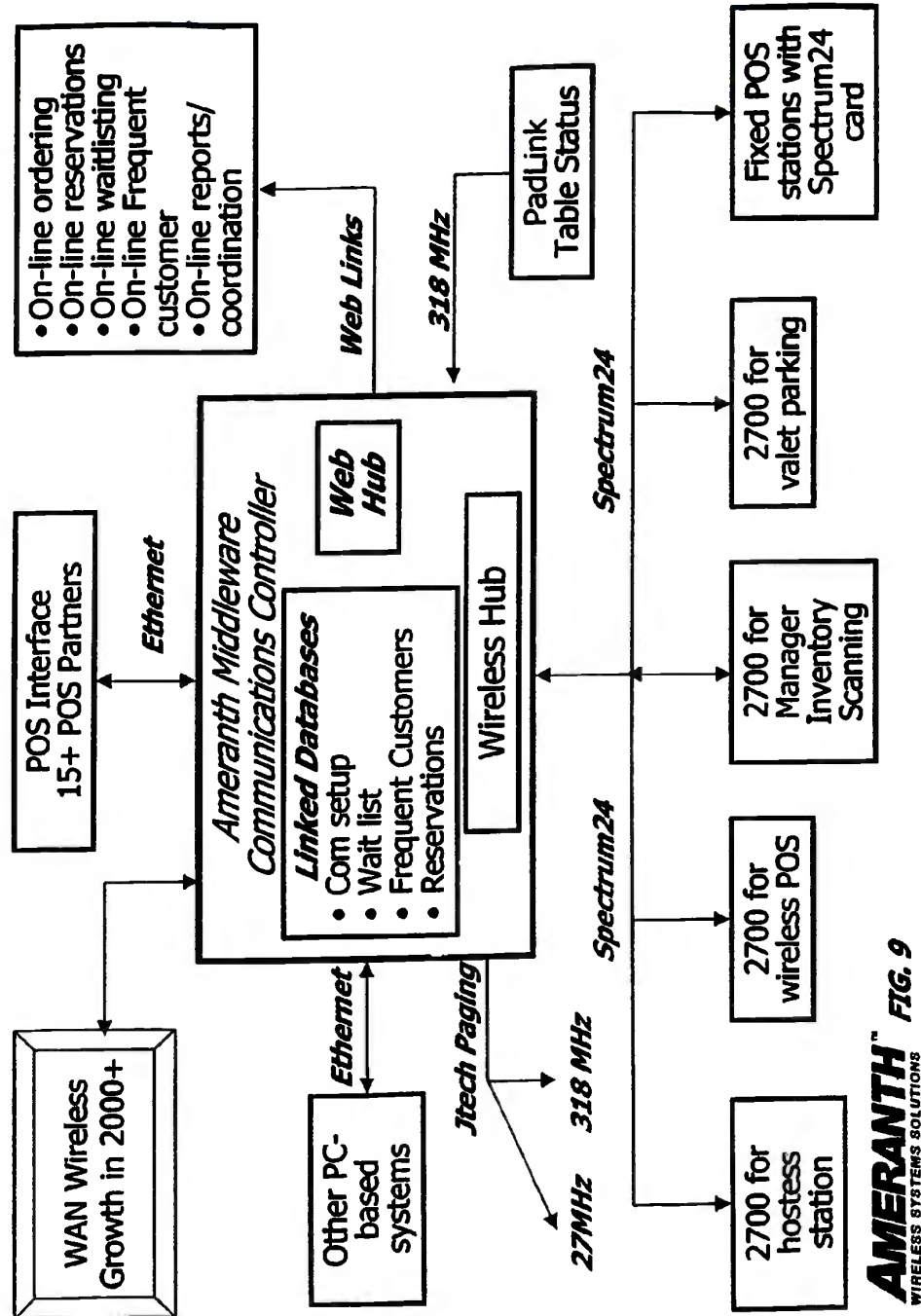
FIG. 8

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Ameranth 21st Century Communications Integration

AMERANTH™ FIG. 9
WIRELESS SYSTEMS SOLUTIONS

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**INFORMATION MANAGEMENT AND
SYNCHRONOUS COMMUNICATIONS
SYSTEM WITH MENU GENERATION, AND
HANDWRITING AND VOICE
MODIFICATION OF ORDERS**

The present application is a continuation of application Ser. No. 10/016,517, filed Nov. 1, 2001 now U.S. Pat. No. 6,982, 733, which is a continuation-in-part of application Ser. No. 09/400,413, filed Sep. 21, 1999 (now U.S. Pat. No. 6,384, 850). The contents of application Ser. No. 10/016,517 and application Ser. No. 09/400,413 are incorporated herein by reference.

FIELD OF THE INVENTION

This invention relates to an information management and synchronous communications system and method for generation of computerized menus for restaurants and other applications with specialized display and synchronous communications requirements related to, for example, the use of equipment or software with non-PC-standard graphical formats, display sizes and/or applications for use in remote data entry, information management and synchronous communication between host computer, digital input device or remote pager via standard hardwired connection, the internet, a wireless link, smart phone or the like.

BACKGROUND OF THE INVENTION

While computers have dramatically altered many aspects of modern life, pen and paper have prevailed in the hospitality industry, e.g., for restaurant ordering, reservations and wait-list management, because of their simplicity, ease of training and operational speed. For example, ordering prepared foods has historically been done verbally, either directly to a waiter or over the telephone, whereupon the placed order is recorded on paper by the recipient or instantly filled.

Although not previously adapted for wide-scale use in the hospitality industry, various forms of digital wireless communication devices are in common use, e.g., digital wireless messengers and pagers. Also in common use are portable laptop and handheld devices. However, user-friendly information management and communication capability not requiring extensive computer expertise has not heretofore been available for use in everyday life such as for restaurant ordering, reservations and wait-list management. Hundreds of millions of dollars have been spent on personal digital assistant ("PDA") development seeking to produce a small, light-weight and inexpensive device that could be adapted to such uses; yet none have yielded a satisfactory solution.

One of the inherent shortcomings of PDA type devices is that, as they strive for small size, low weight and low cost, they must compromise the size and clarity of the operator display medium interface itself, which in most cases is one of a variety of LCD (liquid crystal display) type devices. As the size of the display shrinks, the amount of information that may be displayed at any one point or time is commensurately decreased, typically requiring multiple screens and displays to display information to the operator. This reduces the overall utility of the device. Additionally, the smaller display and keyboard results in a non-optimal operator interface, which slows down operation and is thus unacceptable for the time criticality of ordering, reservation and wait-list management and other similar applications. This necessitates many design

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compromises which in the aggregate have resulted in limited acceptance of PDA type devices in the restaurant and hospitality fields.

Many of the negatives prevalent in earlier devices have been eliminated, but, to date, there is still no integrated solution to the ordering/waitlist/reservation problem discussed above. With the advent of the Palm® and other handheld wireless devices, however, the efforts to make such devices ubiquitous have begun to bear fruit at least in some areas, e.g., personal calendars. However, substantial use of such devices in the restaurant and hospitality context has not occurred to date. As discussed above, at least one of the reasons PDAs have not been quickly assimilated into the restaurant and hospitality industries is that their small display sizes are not readily amenable to display of menus as they are commonly printed on paper or displayed on, e.g., large, color desktop computer screens. Another reason is that software for fully realizing the potential for wireless handheld computing devices has not previously been available. Such features would include fast and automatic synchronization between a central database and multiple handheld devices, synchronization and communication between a World Wide Web ("Web") server and multiple handheld devices, a well-defined application program interface ("API") that enables third parties such as point of sale ("POS") companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database. A single point of entry for all hospitality applications to communicate with one another wirelessly has also previously been unavailable. Such a single point of entry would work to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online would be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices would be reflected instantaneously on the backoffice server, Web pages and the other handheld devices.

For the foregoing reasons, paper-based ordering, waitlist and reservations management have persisted in the face of widespread computerization in practically all areas of commerce. At most, computerization of these functions has been largely limited to fixed computer solutions, i.e., desktop or mainframe, because of the problems heretofore faced in configuring wireless handheld devices and maintaining database synchronization for such applications. Specifically, the unavailability of any simple technique for creating restaurant menus and the like for use in a limited display area wireless handheld device or that is compatible with ordering over the internet has prevented widespread adoption of computerization in the hospitality industry. Without a viable solution for this problem, organizations have not made the efforts or investments to establish automated interfaces to handheld and Web site menus and ordering options.

A principal object of the present invention is to provide an improved information management and synchronous communications system and method which facilitates user-friendly and efficient generation of computerized menus for restaurants and other applications that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.

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A further object of the present invention is to provide an improved information management and synchronous communications system and method which provides for entry, management and communication of information from the operator as well as to and from another computer, Web page menu, remote digital device using a standard hardwired connection, the internet or a wireless link.

A further object of the present invention is to provide an improved information management and synchronous communications system which is small, affordable and lightweight yet incorporates a user-friendly operator interface and displays menus in a readily comprehensible format.

A further object of the present invention is to provide a synchronous information management and communications system which enables automatic updating of both wireless and internet menu systems when a new menu item is added, modified or deleted from any element of the system.

SUMMARY OF THE INVENTION

The foregoing and other objects of the present invention are provided by a synchronous information management and communications system and method optimized for simplicity of operation which incorporates menu generation for creation of menus to be used with wireless remote handheld computer and PDA devices, the internet or any application where simple and efficient generation of menus is appropriate. The menu generation approach of the present invention includes a desktop software application that enables the rapid creation and building of a menu and provides a means to instantly download the menu configuration onto, e.g., a handheld device or Web page and to seamlessly interface with standard point of sale ("POS") systems to enable automatic database updates and communication exchanges when a change or input occurs in any of the other system elements. To solve the above and other related problems, an information management and communications system is provided which results in a dramatic reduction in the amount of time, and hence cost, to generate and maintain computerized menus for, e.g., restaurants and other related applications that utilize non-PC-standard graphical formats, display sizes or applications.

The menu generation approach of the present invention has many advantages over previous approaches in solving the problem of converting paper-based menus or Windows® PC-based menu screens to small PDA-sized displays and Web pages. In one embodiment, the present invention is a software tool for building a menu, optimizing the process of how the menu can be downloaded to either a handheld device or Web page, and making manual or automatic modifications to the menu after initial creation.

Manual modifications to the generated menus include handwritten screen captures and/or voice recorded message captures coupled with the standard menus and modifiers generated according to standard choices. Such manual modifications enable an extremely rapid and intuitive interface to enhance operations and further optimize the overall operator interface. This approach solves a long-standing, operational issue in restaurant/hotel/casino food/drink ordering when customers want something unusual and not anticipated and available through normal computerized selections. As seen in FIG. 8, the operator screen on the hand-held can capture handwritten information specific to a customers requests directly on the touch-sensitive screen of the wireless computing device. This additional information can then be coupled with the fixed menu and modifier information generated automatically from the hospitality application software and the combined message can be sent to a restaurant point of sale

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(POS) system, printer or/ or display system. This unique operator interface enables universal languages and an unlimited set of information to be manually communicated and exchanged. The resultant combined message of one or more fixed indications selected from a menu of a device such as a hand-held, and dynamic handwritten messages and/or data provides an even more powerful tool than either modality used independently.

For example a restaurant server taking a drink order could select from a menu of her hand-held device's screen "Iced Tea", and then manually write in the literal screen of her hand-held "with lemon" as shown in FIG. 8. The manually-written information could, for example, be printed or displayed in front of a bartender preparing the drink order. The indication "Iced Tea" as selected from a menu of the hand-held would also be presented to the bartender, perhaps by printing and/or screen display. The server can also select any printer from within the hospitality establishment directly from the operator interface on the screen of the hand-held and have either the order or the receipt printed out where it is most convenient and efficient.

Similarly, a server taking a drink order could select from a menu of her hand-held device's screen "Iced Tea", and then record the voice message "with lemon" using her hand-held device integral microphone. The recorded information could, for example, be played on a speaker attached to a computer, POS system, or the like located near the bartender or chef preparing the order. The indication "Iced Tea" as selected from a menu of the hand-held would also be presented to the bartender/chef, perhaps by printing and/or screen display. Both the literal screen capture method and the voice recorded message method combine the power of automatic fixed menu generation with the expanded flexibility to resolve operational issues that exist throughout the hospitality market without this innovative solution. Additionally, in certain embodiments, hand-writing and voice recognition technologies can be utilized to convert the manual operator inputs into appropriate text messages which can be combined with the computer generated menu options to convey the combined information to, for example, a bartender or chef.

Similarly, hand-held devices can link the above innovations to individual customers at specific tables through a graphical user interface on the hand-held screen that assigns each customer a number within a table. For example, table 20 might have 6 customers (1-6) and each customer has a different order. By enabling the linkage of the orders to specific customer positions within the table and accessible from the hand-held screen, the servers can easily track and link the specific orders to the specific customers.

The use of wireless handheld devices in the restaurant and hospitality industry is becoming increasingly pervasive as restaurant owners and managers become more aware of the benefits. With the proper wireless handheld system in place, restaurants can experience increased table turns from improved server productivity and shorter order taking and check paying times. Restaurants and POS companies seeking to provide a wireless handheld interface to their desktop-based POS systems or a Web page equivalent face several challenges. These challenges include building a menu using their existing database and transferring the menu onto hand-held devices or Web pages that will interface with servers wirelessly or to restaurants/customers over the internet. The menu generation approach of the present invention is the first coherent solution available to accomplish these objectives easily and allows one development effort to produce both the handheld and Web page formats, link them with the existing

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POS systems, and thus provides a way to turn a complicated, time-consuming task into a simple process.

The information management and synchronous communications system of the present invention features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The communication module also provides a single point of entry for all hospitality applications, e.g., reservations, frequent customer ticketing, wait lists, etc. to communicate with one another wirelessly and over the Web. This communication module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol and can be easily updated to work with a new communication protocol without modifying the core hospitality applications. An exemplary system diagram of such a communications systemic relationship is shown in FIG. 9 and serves as an example of the power of the synchronization element of the invention through a common, linked solution. A single point of entry works to keep all wireless handheld devices and linked web sites in synch with the backoffice server applications so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online can be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices are reflected instantaneously on the backoffice server Web pages and the other handheld devices.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing features and advantages of the present invention can be appreciated more fully from the following description, with references to the accompanying drawings in which:

FIG. 1 is a schematic representation of a window displayed on a computer display screen which shows a hierarchical tree menu, modifier window and sub-modifier window in conformity with a preferred embodiment of the present invention.

FIG. 2 is a schematic representation of a modifier dialog box in conformity with a preferred embodiment of the present invention.

FIG. 3 is a schematic representation of a menu category dialog box in conformity with a preferred embodiment of the present invention.

FIG. 4 is a schematic representation of a menu item dialog box in conformity with a preferred embodiment of the present invention.

FIG. 5 is a schematic representation of a display customization dialog box in conformity with a preferred embodiment of the present invention.

FIG. 6 is a schematic representation of a communications control window in conformity with a preferred embodiment of the present invention.

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FIG. 7 is a schematic representation of a point of sale interface on a wireless handheld device for use in displaying page menus created in conformity with a preferred embodiment of the present invention.

FIG. 8 is an example of a literal, hand-written screen according to embodiments of the present invention.

FIG. 9 is an exemplary system diagram relating to embodiments of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Most personal computers today run under an operating system that provides a graphical user interface ("GUI") for accessing user applications. A GUI is used in the preferred embodiment of the present invention. Through an interface of windows, pull-down menus, and toolbars, GUI operating systems have simplified PCs and have rendered computer technology more user friendly by eliminating the need to memorize keyboard entry sequences. In addition, GUIs allow users to manipulate their data as they would physical entities. For example, a window can represent a file and the contents of the window can represent the records of the file. The window can be opened, closed, or set aside on a desktop as if it were an actual object. The records of the file can be created, deleted, modified and arranged in a drag-and-drop fashion as if they also were physical objects. The most common GUI operating systems that provide this "object-oriented" environment for personal computers are Microsoft Windows® systems, including Windows CE® for handheld wireless devices and the like. Generally, a particular application program presents information to a user through a window of a GUI by drawing images, graphics or text within the window region. The user, in turn, communicates with the application by "pointing" at graphical objects in the window with a pointer that is controlled by a hand-operated pointing device, such as a mouse, or by pressing keys on a keyboard.

The use of menus is conventional in GUIs for software applications. Menus are typically utilized to provide end users of applications with available choices or processing options while using the applications. For example, in a typical desktop or interactive application, selection of a "file" from a menu bar may cause display of a context menu which provides "file" options. File options can have additional subordinate or child options associated with them. If a file option having subordinate options is selected, the child options are displayed in context in a child menu or submenu proximate to the selected parent option. One or more of the child options provided in the child menu may have further subordinate options. Thus, such a menu system comprises cascading sets of menus which are displayable in context to show the parent/child relationships between options of the context menu. A menu system of this type is incorporated into the preferred embodiment of the invention.

The preferred embodiment of the present invention uses typical hardware elements in the form of a computer workstation, operating system and application software elements which configure the hardware elements for operation in accordance with the present invention. A typical workstation platform includes hardware such as a central processing unit ("CPU"), e.g., a Pentium® microprocessor, RAM, ROM, hard drive storage in which are stored various system and application programs and data used within the workstation, modem, display screen, keyboard, mouse and optional removable storage devices such as floppy drive or a CD ROM drive. The workstation hardware is configured by software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including internet browsing soft-

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ware) and application software components. The preferred embodiment also encompasses a typical file server platform including hardware such as a CPU, e.g., Pentium® microprocessor, RAM, ROM, hard drive, modem, and optional removable storage devices, e.g., floppy or CD ROM drive. The server hardware is configured by software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including Web server software) and database software.

A computer workstation for use in the preferred embodiment also includes a GUI. As is conventional, the GUI is configured to present a graphical display on the display screen arranged to resemble a single desktop. Execution of an application program involves one or more user interface objects represented by windows and icons. Typically, there may be several windows and icons simultaneously present on the desktop and displaying information that is generated by different applications.

The window environment is generally part of the operating system software that includes a collection of utility programs for controlling the operation of the computer system. The computer system, in turn, interacts with application programs to provide higher level functionality, including a direct interface with the user. Specifically, the application programs make use of operating system functions by issuing task commands to the operating system which then performs the requested task. For example, an application program may request that the operating system display certain information on a window for presentation to the user.

An aspect of the preferred embodiment of the information management and communications system of the invention is shown in FIG. 1. FIG. 1 shows an example of the GUI provided by the operating system of the preferred embodiment of the present invention. With reference to FIG. 1, the preferred embodiment includes an intuitive GUI 1 from which to build a menu on a desktop or other computer. A hierarchical tree structure 2 is used to show the different relationships between the menu categories 3 (e.g., soups, salads, appetizers, entrees, deserts, etc.), menu items 4 (e.g., green salad, chicken caesar salad, etc.), menu modifiers 5 (e.g., dressing, meat temperature, condiments, etc.) and menu sub-modifiers 6 (e.g., Italian, French, ranch, bleu cheese, etc.).

The procedure followed in configuring a menu on the desktop PC and then downloading the menu configuration onto the POS interface on the handheld device in conformance with the preferred embodiment is as follows.

The menu configuration application is launched by clicking on the appropriate icon on the desktop display screen. FIG. 1 will then be displayed. There are three windows on the screen shown in FIG. 1. The left window is the menu tree 7, also called the tree view. The top right window is the Modifiers window 8 and the bottom right window is the Sub-Modifiers window 9. The Sub-Modifiers window lists the sub-modifiers that correspond to the modifier that is selected. The views on the right are referred to as list views. There are several ways of invoking a command, including using the menu options; using the context menu (right mouse click); using the keyboard or using the toolbar icons. For example, if it is desired to add a category to the menu, the following four options are available: (1) clicking on Edit, Add Category; (2) right mouse clicking on Menu, then clicking on Add Category; (3) highlighting Menu, then typing Ctrl+T or (4) clicking on the Add Category icon on the toolbar. To add an item to a category, the following options are available: (1) highlighting the category to which it is desired to add an item and then clicking on Edit>Add Item; (2) right mouse clicking on the

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desired category and then clicking on Add Item; (3) highlighting the desired category, then typing Ctrl+N or (4) clicking on the Add icon on the toolbar.

When building a menu, it should be kept in mind that the menu items are stored using a tree metaphor similar to how files are stored on a PC with folders and subfolders. The menu structure is similar to the Windows® File Explorer in the way the items are organized hierarchically. Below is an example of how an item may be configured:

Menu	Entrees	Red Meat	NY Strip	Vegetables
>>	>>	>>	>>	>>
				Tomato
				Lettuce
				Meat Temperature
				>>
				Medium Rare

In the above example, Menu is the root. Entrees is a menu category. Red Meat is an Entree category. NY Strip is a modifier. Vegetable is a modifier. Meat Temperature is a modifier. Medium Rare is a sub-modifier of Meat Temperature.

The steps taken in building a menu are as follows:

1. Add Modifiers;
2. Add Sub-Modifiers and link them to the Modifiers;
3. Create Menu categories;
4. Add menu items to the categories;
5. Assign Modifiers to the menu items;
6. Preview the menu on the POS emulator on the desktop PC;
7. Download the menu database to the handheld device.

To add modifiers, a user clicks on the inside of the Modifiers window, then (1) clicks on Edit>Add Modifier; (2) Presses Ctrl+N; (3) right mouse clicks in the Modifiers window, then clicks on Add Modifiers or (4) clicks on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in the Modifier dialog box 10 shown in FIG. 2. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and "OK" is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item as a modifier. To delete a modifier, the modifier is selected and the Delete key pressed on the keyboard. To edit a modifier, either the modifier is double clicked or the Enter key is pressed.

Sub-modifiers represent the last level of modifiers that can be assigned to a menu tree. To add sub-modifiers, the modifier to which sub-modifiers are to be assigned is selected. Then, the focus is set on the sub-modifier window by clicking inside the Sub-Modifier window as follows: (1) clicking on Edit>Add Sub-Modifier; (2) pressing Ctrl+N; (3) right mouse clicking in the Sub-Modifiers window, then clicking on Add Sub-Modifiers or (4) clicking on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in a Sub-Modifier dialog box similar to the Modifier dialog box

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shown in FIG. 2. As with modifiers, the Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. As before, if there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item as a sub-modifier. To delete a sub-modifier, the sub-modifier is selected and the Delete key depressed on the keyboard. To edit a sub-modifier, either the sub-modifier is double clicked or the Enter key is pressed.

Menu categories are created from the root. Some examples of categories are Appetizers, Soups, Salads, Entrees, Desserts, etc. The first step is to click on Menu in the menu tree window. Categories are added by (1) clicking on the Add Category icon from the toolbar; (2) clicking on Edit>Add Category or (3) pressing Ctrl+T. As shown in FIG. 3, Menu Category dialog box 11 then appears in which to enter the Long and Short names for the menu category.

To add menu items to categories, the menu category which is being built is clicked. For example, if items are being added to Appetizers, the Appetizers branch is clicked on. Then the Edit>Add Item is clicked on or Ctrl+N pressed. As before, if a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code, Prep Time, Recipe and Price into the Menu Item dialog box 12 shown in FIG. 4. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. Prep Time is the time it takes to prepare the meal and Recipe would include preparation methods and ingredients that are used in the preparation of the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item to the category.

Once the menu items have been entered, it may be desired to assign some modifiers to the menu items. For example, it may be desired to assign meat temperature to a steak order. To accomplish this, first the modifier to be assigned is selected, then the menu item on the tree view that is to be assigned the modifier is clicked on and then Edit>Assign Modifier is clicked on. Or, the modifier can simply be dragged and dropped onto the menu item to link them. A dialog box is then displayed asking if this modifier is a required modifier. If it is a required modifier, the display icon will be red but if it is a non-required modifier the display icon will be green. As many modifiers as are applicable can be assigned. If any changes are made to the modifiers, those changes will be automatically reflected throughout the menu tree.

Once the modifiers have been entered, it may be desired to assign sub-modifiers to the modifiers items. For example, it may be desired to add Honey Mustard as a sub-modifier to Dressing. To accomplish this, first the modifier to be assigned a sub-modifier is selected, then the sub-modifier window is clicked on, then Edit>Add Sub Modifier is clicked on, Ctrl+N entered or the Add icon from the toolbar is clicked on. Or, the sub-modifier can simply be dragged and dropped onto the modifier to link them.

When the menu has been completely configured, it can be previewed on a POS emulator on the desktop to verify that the

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menu is correctly configured before downloading it to the handheld device. To preview, File>Preview Database is clicked on or the Preview Database icon from the toolbar is clicked on. The handheld POS emulator on the desktop can then be run. If the configuration is deemed acceptable, the handheld device is connected to the desktop PC to ensure that a connection has been established; the POS application on the handheld device is exited and File>Download Database is clicked on or the Download Database icon from the toolbar is clicked on. If there is an existing menu database on the handheld device, the system will ask if the existing database should be replaced. Yes is clicked if existing database replacement is desired.

A database function enables the creation of, e.g., a breakfast menu, lunch menu and dinner menu and downloading them to a handheld device. Functions available are (1) creating a new database; (2) opening an existing database; (3) saving a database under a different name. To access these functions, File is clicked on the menu bar.

The preferred embodiment encompasses customized layout, views and fonts. To set the focus on the view it is desired to change, click inside the desired window. The main customizing dialog box is accessed by clicking on View>Customize View. A dialog box 13, as shown in FIG. 5, will be displayed including tabs that allow the following options: selection of Columns to display in the list view by choosing and arranging the fields to display in the Modifiers and Sub-Modifiers windows; formatting Columns by specifying the column widths and justification; selecting Filter allows restricting the list to display only the items that meet certain criteria. For example, display of modifiers with codes between 500 and 550. Selecting Sort allows sorting the modifiers or sub-modifiers according to any of the available fields such as Name, Code or Price. Selecting Style facilitates choice of font type, style, size, etc. To change the font in a particular window, click on View>Fonts or right mouse click in the desired window and then click on Fonts. To change the size of the windows, drag the borders of the windows to expand or contract the size of the windows. To change the column widths, simply drag the edge of the column headers to increase or decrease the column widths.

A communications control program monitors and routes all communications to the appropriate devices. It continuously monitors the wireless network access point and all other devices connected to the network such as pagers, remote devices, internet Web links and POS software. Any message received is decoded by the software, and then routed to the appropriate device. No user action is needed during operation of the software once the application has been launched. To launch the communications control module, a Wireless Traffic icon is clicked on the desktop PC. When the program loads, the screen shown in FIG. 6 appears. Messages received are logged in the window 14 shown in FIG. 6 with a time stamp. The messages are also logged to a file on the hard drive. This provides a mechanism to monitor all traffic across the network (possibly useful for troubleshooting, or maintenance, but not necessary for normal operation). The program may be minimized so the screen is not displayed on the desktop, but it must be running for proper communications to exist between all devices on the network.

As stated, the preferred embodiment of the present invention includes the use of and compatibility with GUI technology. A drag-and-drop approach is used for organizing the tree structure 2 in the generated menu. Drag-and-drop is also used for assigning modifiers (modifiers can be dragged from the modifiers window 5 and dropped onto the menu item 4 for assignment). In-cell editing results in fast editing of items in

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building the menus. Customizable fonts enable users to change font types, style and size. Customizable layouts enable users to resize windows, change icons and display preferences. The inventive approach provides for fully persistent storage between sessions, even if a session is improperly or abruptly terminated. Font and the tree state (i.e., which nodes are expanded/collapsed) are stored between sessions. Layout for modifiers and sub-modifiers list views (filter, columns, formatting, font, etc.) are stored between sessions. The last database used is likewise stored between sessions. Splitter views allow the user to see different views at the same time. Each view is displayed on its own section of the screen. Views can be resized via the keyboard or a mouse by simply dragging the splitter in the middle.

An automated function is provided to import existing POS databases into the inventive menu generation system and, as discussed above with respect to the detailed example of how to use the preferred embodiment, an automated download procedure is provided to transfer the desktop database onto a handheld device and/or Web page. Also as discussed, the preferred embodiment facilitates preview of the handheld device or Web page version of the POS menu on the desktop before downloading and configuration. Customizable desktop menu generation is contemplated, as discussed above, in the form of customizable fonts, columns, layouts, etc. The inventive approach also includes templates for common modifiers that can be assigned to similar menu items. The preferred embodiment also supports multiple databases, thus providing for the creation and storing of different menu databases on handheld devices such as breakfast, lunch or dinner menus. The user can then select the appropriate database to reflect the time of day.

FIG. 7 is a schematic representation of a point of sale interface 15 for use in displaying a page-type menu 16 created using the inventive menu generation approach. As can be seen from FIG. 7, the page menu is displayed in a catalogue-like point-and-click format whereas the master menu, FIG. 1, is displayed as a hierarchical tree structure. Thus, a person with little expertise can "page through" to complete a transaction with the POS interface and avoid having to review the entire menu of FIG. 1 to place an order. A PDA or Web page format could appear like FIG. 7 or the display could be configured for particular requirements since fully customizable menu generation and display are contemplated.

The POS interface on the handheld device supports pricing in the database or querying prices from the POS server. The POS device also can be customized with respect to "look and feel" for the particular version. As can be seen in FIG. 7, the POS interface provides for billing, status and payment with respect to orders. A myriad of options can be provided depending on the application.

Advanced database functions are provided in the preferred embodiment of the invention, including an automated download process onto handheld devices and/or Web sites. In the preferred embodiment, the menu generation system of the present invention uses an API called ActiveX Data Objects ("ADO") for database access. ADO is useful in a variety of settings. It is built on top of OLE DB and can be used to talk to databases and, in the future, any data source with any OLE DB driver. Advanced querying is supported. The database can be queried on virtually all fields. Queries can be built using SQL syntax for experienced users or can be created using a query builder which guides users through the creating process. Advanced error handling is supported. Errors occurring at run time can be trapped. A descriptive message is displayed to alert the user and provide error information. However, the application does not terminate when the errors happen. The

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source code is easy to maintain and modify, thus allowing for on time delivery of customized versions of the software. The advanced database functions produce well-designed databases that accommodate growth and scalability

The inventive menu generation approach provides a solution for the pervasive connectivity and computerization needs of the restaurant and related markets. The inventive solution includes automatic database management and synchronization, PDA and handheld wireless operating system integration and optimization, wireless communications and internet connectivity, user interface design, and graphics design.

In the preferred embodiment, the menu generation approach of the present invention uses Windows CE® as the operating system for the handheld devices. Windows CE® provides the benefits of a familiar Windows 95/98/NT® look and feel, built-in synchronization between handheld devices, internet and desktop infrastructure, compatibility with Microsoft Exchange®, Microsoft Office 9® and TCP/IP quick access to information with instant-on feature.

Windows CE® provides a basic set of database and communication tools for developer use. However, interfacing with these tools to provide application specific results can be a complex task. In addition to the menu generation described above, a set of software libraries described herein in conformance with the present invention not only enhances the basic Windows CE® functionality by adding new features but also maximizes the full potential of wireless handheld computing devices. Such features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The synchronous communications control module discussed above provides a single point of entry for all hospitality applications to communicate with one another wirelessly or over the Web. This communications module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol. This layer can be easily updated to work with a new communication protocol without having to modify the core hospitality applications. The single point of entry works to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online is automatically communicated to the backoffice server which then synchronizes with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices will be reflected instantaneously on the backoffice server and the other handheld devices.

The software applications for performing the functions falling within the described invention can be written in any commonly used computer language. The discrete programming steps are commonly known and thus programming details are not necessary to a full description of the invention.

A simple point-to-point wireless capability is contemplated which permits simple digital messages to be sent from the wireless handheld devices to a receiver in a beeper and/or valet parking base-station. The POS interface of FIG. 7 is representative of the display on a typical wireless device used in conformity with the invention. A simple protocol is used to

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acknowledge receipt of the message and thus simultaneous communication is not necessary, which reduces the cost of the wireless link. The range of the wireless link is determined by the characteristics of the radio transceiver. Adding a wireless link allows paging of beeper equipped customers directly from the operator interface on the wireless handheld devices and communication to and from various input/output transmitters and receivers to update the status of the order, reservation or other information and thus further reduce the workload on the operator and enable operations to proceed much faster. This link could also be hardwired or otherwise implemented using any two-way messaging transport.

A further aspect of the invention is the use of the menus generated in accordance with the described technique to place orders from wireless remote handheld devices or from remote locations through the internet. The World Wide Web is a distributed hypermedia computer system that uses the internet to facilitate global hypermedia communication using specified protocols. One such protocol is the Hypertext Transfer Protocol ("HTTP"), which facilitates communication of hypertext. Hypertext is the combination of information and links to other information. In the context of the Web, hypertext is defined by the Hypertext Mark-up Language ("HTML"). The links or hyperlinks in a HTML document reference the locations of resources on the Web, such as other HTML documents. Another language used in creating documents for use on the Worldwide Web, to display on computer screens, or to create speech style sheets for use in, e.g., telephones, is the Extensible Mark-Up Language ("XML"). XML is a "metalanguage", i.e., a language for describing languages which was developed to eliminate the restrictions of HTML.

The Web is a client-server system. The HTML documents are stored on Web server computers, typically in a hierarchical fashion with the root document being referred to as the home page. The client specifies a HTML document or other source on the server by transmitting a Uniform Resource Locator ("URL") which specifies the protocol to use, e.g., HTTP, the path to the server directory in which the resource is located, and filename of the resource. Users retrieve the documents via client computers. The software running on the user's client computer that enables the user to view HTML documents on the computer's video monitor and enter selections using the computer's keyboard and mouse is known as a browser. The browser typically includes a window in which the user may type a URL. A user may cause a URL to be transmitted by typing it in the designated window on the browser or by maneuvering the cursor to a position on the displayed document that corresponds to a hyperlink to a resource and actuating the mouse button. The latter method is commonly referred to simply as "clicking on the hot-spot" or "clicking on the hyperlink". The hyperlink methodology is contemplated for use in accordance with the preferred embodiment to transmit orders via the internet.

Web server application software exists that enables a user to shop for and order merchandise. Such systems are sometimes referred to as electronic merchandising systems or virtual storefronts. Systems that enable a user to choose among several retailers' goods are sometimes referred to as electronic malls. An electronic retailer's or electronic mall operator's Web server provides HTML forms that include images and descriptions of merchandise. The user may conventionally search for an item by entering a key word search query in a box on a form. When a user selects an item, the server may provide a linked form that describes that item in further detail. The user may also conventionally enter ordering information into boxes on the form, such as the type and quantity of the

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item desired. The information entered by the user is transmitted to the server. The user may select multiple items in this manner and then enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer. As can be appreciated, ordering merchandise can also be done from menus. The generation of menus of items or merchandise for sale over the internet is readily accomplished by the menu generation approach of the present invention.

Searching for items that the user is interested in purchasing is insufficient in prior merchandising systems. Database management programs use index searching to facilitate rapid searching of large amounts of data. The creator of the database may instruct the program to use specified fields in the database as indexed or key fields. The program locates all terms in the database that appear in the indexed fields and stores them in an index table. Each entry in the index table includes a term and corresponding pointer to the location in the database where the term is found. If a user initiates a search for a term that is present in the index table, the program can locate the instances of that term in the database with exceptional speed. Users who are familiar with the particular database they are searching will generally know which fields are indexed and will know the format of the data in those fields. For example, a user of a database containing the inventory of a bookstore may know that users can search for the names of authors of books and that a user who wishes to do so should enter the author's last name first. A user having such knowledge will therefore be able to search efficiently. Users of electronic merchandising systems, however, are generally end-consumers who have no knowledge of a merchant's database. If, as is very likely, such a user initiates a search for a term that is not present in the index table, the program must sequentially search through all records in the database. Sequential records are typically linked by pointers. Using pointers in this manner is very demanding on server resources, resulting not only in an exceptionally slow search, but also creating a bottleneck for other processes that the server may be executing. The menu generation approach of the present invention can be used to create customized menus from a database that includes every item of merchandise the vendor has for sale. In this manner, customers can scan the generated menu much more readily than they could view the entire database and the necessity of having familiarity with the database is eliminated as well, reducing the need for resource intensive pointers.

While the preferred embodiment of the invention is for the generation of restaurant menus and the like, the broad scope of the invention is far greater. For example, menus generated in accordance with the invention can be used in the desktop computing environment in association with the operating system or application programs. One such use is to facilitate the creation of user personalized file structures for general desktop use. Another use is to facilitate the location of customized menus from master menus for use in association with application software to make the execution of the application software more efficient by, e.g., eliminating the necessity of querying or checking every tree branch in the master menu file structure in response to user input or other criteria and to create handheld/PDA compatible versions of the software.

While the preferred embodiment of the invention includes the selection of items from a master menu wherein the master menu is displayed using a graphical user interface, it is to be appreciated that any means for displaying the master menu to the user and generating another menu in response to and comprised of the selections made is encompassed by the contemplated invention. The invention encompasses the

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selection of nontextual symbols, characters, icons and the like, in addition to text, from a hierarchical tree menu or the like for generation of another menu comprised of such items.

It is also within the scope of the invention to generate menus automatically in response to predetermined criteria. For example, in the restaurant menu generation embodiment, a modified menu can be generated to comply with a particular specification or group of criteria such as, e.g., "dinner", "low cholesterol", "low fat", "fish", "chicken", or "vegetarian". In this embodiment, only items from the master menu that satisfy specified parameters will be included in the generated menu. The selection process could involve selection of master menu items based on tags or identifiers associated with the items or by checking every master menu item against a dictionary of items acceptable for inclusion in the modified menu. It should also be appreciated that the invention encompasses any combination of automatic and manual user selection of the items comprising the generated menu. For example, a user might specify criteria which would further control automatic selection or the user could manually select some items with automatic selection of others. The menu generation aspect of the invention is equally applicable to table-based, drive-thru, internet, telephone, wireless or other modes of customer order entry, as is the synchronous communications aspect of the invention.

The inventive concept encompasses the generation of a menu in any context known to those skilled in the art where an objective is to facilitate display of the menu so as to enable selection of items from that menu. The restaurant menu generation embodiment is but one example of a use for the inventive concept. Likewise, displaying menus generated in accordance with the invention on PDAs and Web pages to facilitate remote ordering are but a few examples of ways in which such a menu might be used in practice. Any display and transmission means known to those skilled in the art is equally usable with respect to menus generated in accordance with the claimed invention.

In the more general situation, menus can be generated in accordance with the present invention in a variety of situations. For example, the usable file structure for a particular data processing application can be dictated by the user or an application program prior to or during the execution of the application program. Efficiencies with respect to computational speed and equipment, e.g., storage and processor, usage can thus be achieved along with the facilitation of display of the generated menu.

While the best mode for carrying out the preferred embodiment of the invention has been illustrated and described in detail, those familiar with the art to which the invention relates will recognize various alternative designs and embodiments which fall within the spirit of practicing the invention. The appended claims are intended to cover all those changes and modifications falling within the true spirit and scope of the present invention.

That which is claimed is:

1. An information management and real time synchronous communications system for configuring and transmitting hospitality menus comprising:

- a. a central processing unit,
- b. a data storage device connected to said central processing unit,
- c. an operating system including a first graphical user interface,
- d. a master menu including at least menu categories, menu items and modifiers, wherein said master menu is capable of being stored on said data storage device pursuant to a master menu file structure and said master

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menu is capable of being configured for display to facilitate user operations in at least one window of said first graphical user interface as cascaded sets of linked graphical user interface screens, and

e. menu configuration software enabled to generate a programmed handheld menu configuration from said master menu for wireless transmission to and programmed for display on a wireless handheld computing device, said programmed handheld menu configuration comprising at least menu categories, menu items and modifiers and wherein the menu configuration software is enabled to generate said programmed handheld menu configuration by utilizing parameters from the master menu file structure defining at least the menu categories, menu items and modifiers of the master menu such that at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration are synchronized in real time with analogous information comprising the master menu,

wherein the menu configuration software is further enabled to generate the programmed handheld menu configuration in conformity with a customized display layout unique to the wireless handheld computing device to facilitate user operations with and display of the programmed handheld menu configuration on the display screen of a handheld graphical user interface integral with the wireless handheld computing device, wherein said customized display layout is compatible with the displayable size of the handheld graphical user interface wherein the programmed handheld menu configuration is configured by the menu configuration software for display as programmed cascaded sets of linked graphical user interface screens appropriate for the customized display layout of the wireless handheld computing device, wherein said programmed cascaded sets of linked graphical user interface screens for display of the handheld menu configuration are configured differently from the cascaded sets of linked graphical user interface screens for display of the master menu on said first graphical user interface, and

wherein the system is enabled for real time synchronous communications to and from the wireless handheld computing device utilizing the programmed handheld menu configuration including the capability of real time synchronous transmission of the programmed handheld menu configuration to the wireless handheld computing device and real time synchronous transmissions of selections made from the handheld menu configuration on the wireless handheld computing device, and

wherein the system is further enabled to automatically format the programmed handheld menu configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and

wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system.

2. The information management and synchronous communications system in accordance with claim 1, wherein the system is further enabled by a communications systemic relationship providing a common, linked system comprising:

- a) A Wireless Hub Application;
- b) A Web Hub Application;

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- c) Linked Databases between two or more different Hospitality Applications; and
- d) A Communications Setup Application.

3. The information management and real time synchronous communications system in accordance with claim 1 wherein the information from the POS database is automatically imported into the system.

4. The information management and real time synchronous communications system in accordance with claim 1, wherein the said Hospitality Applications include at least reservations applications.

5. The information management and real time synchronous communications system in accordance with claim 1, wherein the said Hospitality Applications include at least a Ticketing applications.

6. The information management and real time synchronous communications system in accordance with claim 1 in which the wireless handheld computing device is a smart phone.

7. The information management and real time synchronous communications system in accordance with claim 1, further enabled to facilitate and complete payment processing directly from the wireless handheld computing device including: a) Billing; b) Status and c) Payment Information.

8. The information management and real time synchronous communications system in accordance with claim 1, wherein one or more of the layout, views or fonts of the programmed handheld menu configuration are created in conformity with the display screen parameters of the wireless handheld computing device and wherein the system is enabled to generate a view of the programmed handheld menu configuration for user preview from the central computing unit and which facilitates a further user manual modification prior to the transmissions of the programmed handheld menu configuration to the wireless handheld computing device.

9. An information management and real time synchronous communications system for configuring and transmitting hospitality menus comprising:

- a) a central processing unit;
- b) a data storage device connected to said central processing unit;
- c) an operating system including a first graphical user interface, said operating system configured to interoperate with the central processing unit, the data storage device and application software;
- d) a master menu including menu categories and menu items, wherein said master menu is capable of being stored on said data storage device pursuant to a master menu file structure and said master menu is capable of being configured for display to facilitate user operations in at least one window of said first graphical user interface as cascaded sets of linked graphical user interface screens; and

e) a modifier menu capable of being stored on said data storage device, and menu configuration software enabled to automatically generate a programmed handheld menu configuration from said master menu for display on a wireless handheld computing device, said programmed handheld menu configuration comprising at least menu categories, menu items and modifiers and wherein the menu configuration software is enabled to generate said programmed handheld menu configuration by utilizing parameters from the master menu file structure defining at least the categories and items of the master menu and modifiers from the modifier menu at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration are synchronized in real time with analogous information

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comprising the master and modifier menus wherein the menu configuration software is further enabled to generate the programmed handheld menu configuration in conformity with a customized display layout unique to the wireless handheld computing device to facilitate user operations with and display of the programmed handheld menu configuration on the display screen of a handheld graphical user interface integral with the wireless handheld computing device, wherein said customized display layout is compatible with the displayable size of the handheld graphical user interface,

wherein the programmed handheld menu configuration is configured by the menu configuration software for display as cascaded sets of linked graphical user interface screens appropriate for the customized display layout of the wireless handheld computing device, wherein said cascaded sets of linked graphical user interface screens for display of the programmed handheld menu configuration are configured differently from the cascaded sets of related graphical user interface screens for display of the master menu on said first graphical user interface, and

wherein the system is enabled for real time synchronous communications to and from the wireless handheld computing device utilizing the programmed handheld menu configuration including the capability of real time synchronous transmission of at least the menu categories, menu items and modifiers comprising the programmed handheld menu configuration to the wireless handheld computing device and real time synchronous transmissions of selections made from the handheld menu configuration on the wireless handheld computing device, and

wherein the system is further enabled to automatically format the programmed handheld menu configuration for display as cascaded sets of linked graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and

wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system.

10. The information management and real time synchronous communications system in accordance with claim 9, further including a communications systemic relationship comprising:

- a) A Wireless Hub Application;
- b) A Web Hub Application;
- c) Linked Databases Between two or more different Hospitality Applications; and
- d) A Communications Setup Application.

11. The information management and real time synchronous communications system in accordance with claim 9, wherein at least two different hospitality software applications are integrated between and with one another.

12. The information management and real time synchronous communications system in accordance with claim 9, wherein the system enables automatic importation of the POS database information into the system.

13. An information management and real time synchronous communications system for use with wireless handheld computing devices and the internet comprising:

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a) a master database connected in said system and configured to store hospitality application information pursuant to a master database file structure;

b) at least one wireless handheld computing device connected in said system and configured to display said hospitality application information;

c) at least one web server connected in said system;

d) at least one web page connected in said system and configured to display said hospitality application information; and e) real time communications control software enabled to link and synchronize hospitality application information simultaneously between the master database, wireless handheld computing device, web server and web page,

wherein the communications control software is enabled to utilize parameters from the master database file structure to synchronize the hospitality application information in real time between the master database, at least one wireless handheld computing device, at least one web server and at least one web page such that substantially the same information comprising the hospitality application information is capable of being displayed on the wireless handheld computing device, at least one web page and other display screens of the synchronized system, such that the hospitality application information is synchronized between any connected users,

wherein the communications control software is enabled to act as a real time interface between the elements of the system and any applicable communications protocol,

wherein the communications control software is enabled to automatically and simultaneously configure the hospitality application information for display on both the wireless handheld computing device and the web page in conformity with a customized display layout unique to the wireless handheld computing device or the web page, wherein said customized display layout is compatible with the displayable size of the handheld computing device display screen or the web page, and

wherein the communications control software is further enabled to automatically format a programmed handheld configuration for display as cascaded sets of linked

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graphical user interface screens appropriate for a customized display layout of at least two different wireless handheld computing device display sizes in the same connected system, and

wherein a cascaded set of linked graphical user interface screens for a wireless handheld computing device in the system includes a different number of user interface screens from at least one other wireless handheld computing device in the system, and

wherein the system is enabled for real time synchronous transmission of the configured hospitality application information to the wireless handheld computing device, the web server and the web page and real time synchronous transmissions of inputs responding to the configured hospitality application information from the wireless handheld computing device, or the web server or the web page.

14. The information management and real time synchronous communications system in accordance with claim 13, further including a communications systemic relationship comprising: a) A Wireless Hub Application; b) A Web Hub Application; c) Linked Databases Between two or more different Hospitality Applications; and d) A Communications Setup Application.

15. The information management and real time synchronous communications system of claim 13, wherein the system is enabled to automatically import the information from the POS (point of sale) database into the system.

16. The information management and real time synchronous communications system of claim 13, wherein at least two different hospitality applications are integrated between and with one another.

17. The information management and real time synchronous communications system in accordance with claim 13, wherein the hospitality application information also includes the completion of payment processing.

18. The information management and real time synchronous communications system in accordance claim 13, wherein the configured wireless handheld computing device is a smart phone.

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(12) **United States Patent**
McNally et al.

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(45) **Date of Patent:** ***Jan. 3, 2006**

(54) **INFORMATION MANAGEMENT AND SYNCHRONOUS COMMUNICATIONS SYSTEM WITH MENU GENERATION, AND HANDWRITING AND VOICE MODIFICATION OF ORDERS**

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See application file for complete search history.

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(57) **ABSTRACT**

An information management and synchronous communications system and method facilitates database equilibrium and synchronization with wired, wireless and Web-based systems, user-friendly and efficient generation of computerized menus and reservations with handwritten/voice modifications for restaurants and other applications that utilize equipment with nonstandard graphical formats, display sizes and/or applications for use in remote data entry, information management and communication with host computer, digital input device or, remote pager via standard hardwired connection, the internet, a wireless link, printer or the like.

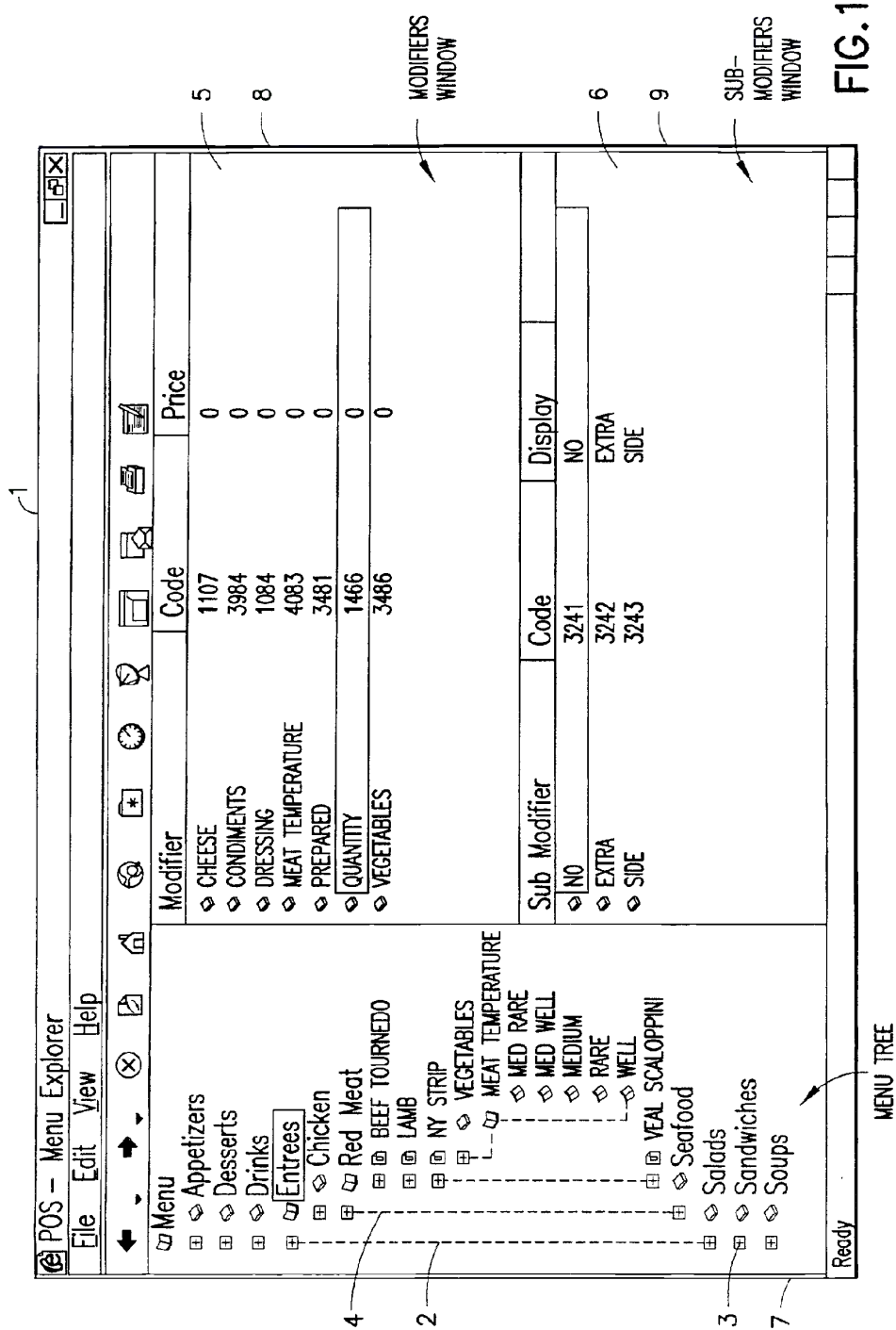
16 Claims, 8 Drawing Sheets

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Modifier

Long Name:

Short Name:

Code:

Price:

OK Cancel Browse

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FIG. 2

Menu Category

Long Name:

Short Name:

OK Cancel Browse

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FIG. 3

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Menu Item

Long Name: Chicken Alaska

Code: 5612

Short Name: ChxAls

Price: 12.95

Prep. Time: 12

Recipe

Flame broiled brandy marinated Tender Chicken Breast topped with a creamy cilantro sauce. Served with steamed broccoli, carrots and zucchini. Spices include lemon pepper, paprika, ginger.

OK Cancel Browse

FIG. 4

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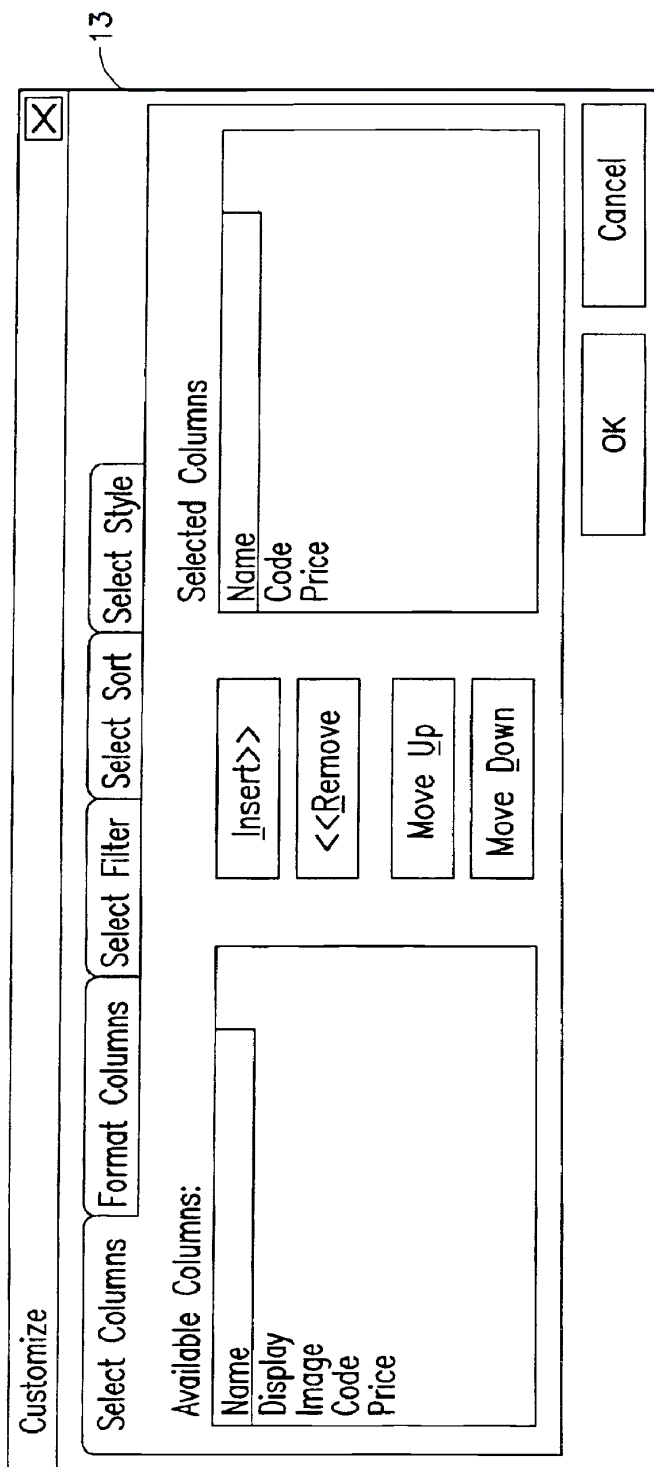


FIG. 5

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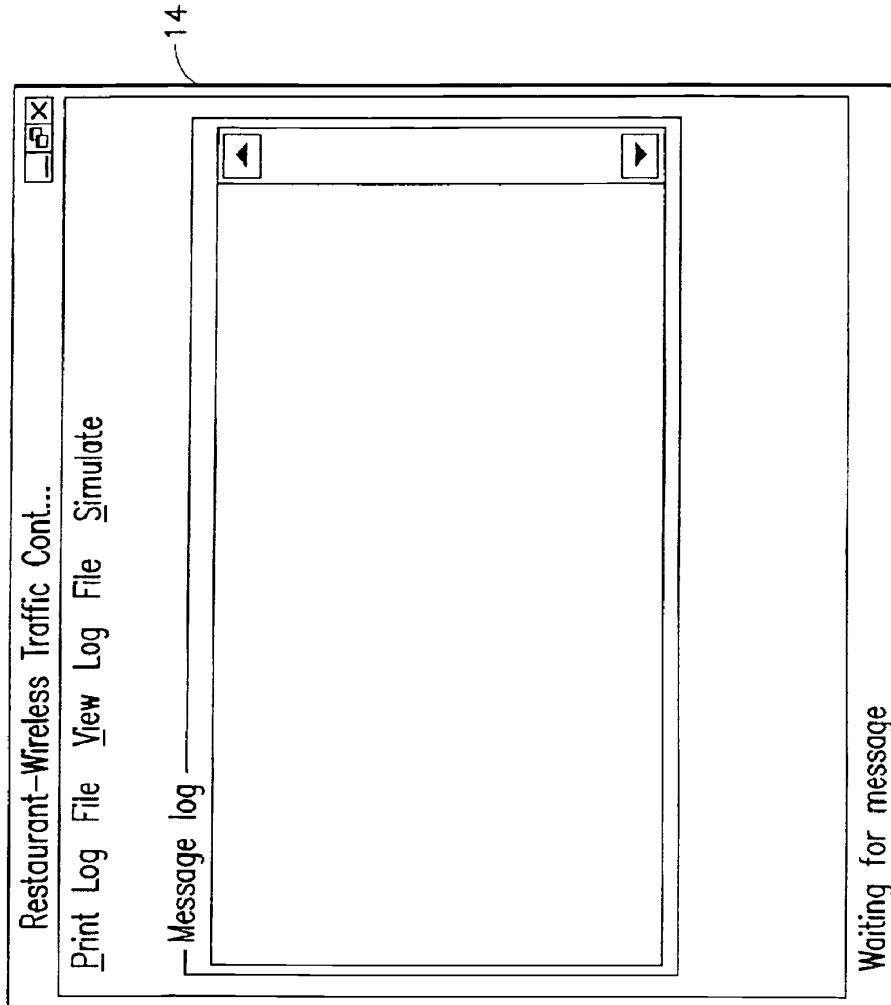


FIG. 6

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POSce-System

Login CHECKS ORDER VIEW PAY

Choose Item: Tbl67 5st 2

App	Dessert	Entrees
Salads	Sdwch	Soups

Direction:

MAIN	PREV	PAGE	MODS
------	------	------	------

Select Guest to Order for:

1	2
---	---

Last Selection

REMOVE LAST

OK Cancel Browse

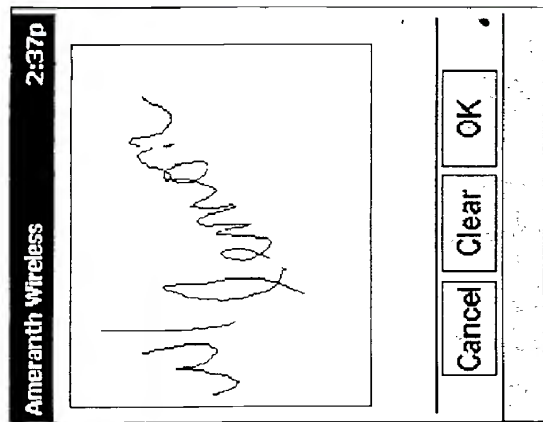
FIG. 7

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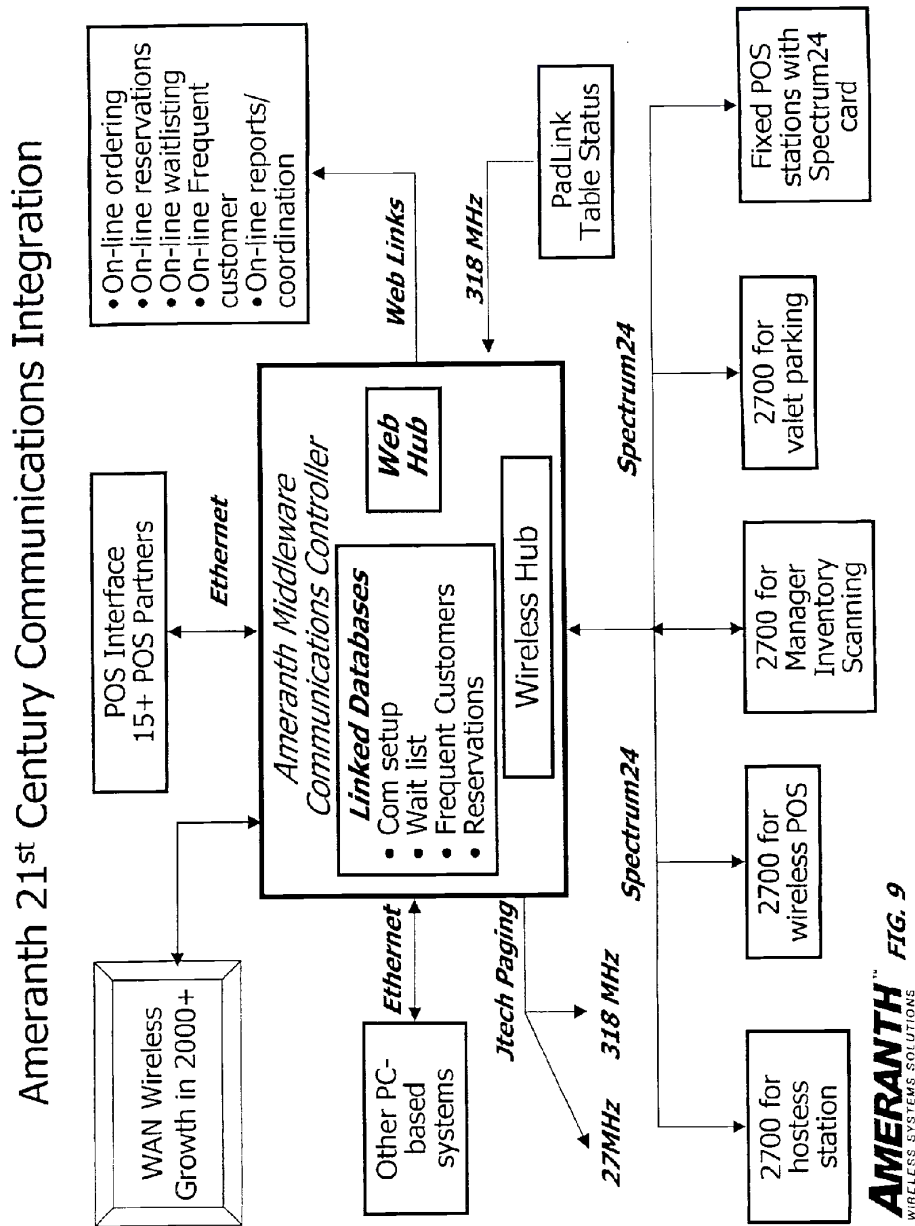
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This is an example of the ordering
“Literal Screen”.

FIG. 8

Appx430



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**INFORMATION MANAGEMENT AND
SYNCHRONOUS COMMUNICATIONS
SYSTEM WITH MENU GENERATION, AND
HANDWRITING AND VOICE
MODIFICATION OF ORDERS**

The present application is a continuation-in-part of application Ser. No. 09/400,413, filed Sep. 21, 1999 now U.S. Pat. No. 6,384,850. The contents of application Ser. No. 09/400,413 are incorporated herein by reference.

FIELD OF THE INVENTION

This invention relates to an information management and synchronous communications system and method for generation of computerized menus for restaurants and other applications with specialized display and synchronous communications requirements related to, for example, the use of equipment or sore with non-PC-standard graphical formats, display sizes and/or applications for use in remote data entry, information management and synchronous communication between host computer, digital input device or remote pager via standard hardwired connection, the internet, a wireless link, smart phone or the like.

BACKGROUND OF THE INVENTION

While computers have dramatically altered many aspects of modern life, pen and paper have prevailed in the hospitality industry, e.g., for restaurant ordering, reservations and wait-list management, because of their simplicity, ease of training and operational speed. For example, ordering prepared foods has historically been done verbally, either directly to a waiter or over the telephone, whereupon the placed order is recorded on paper by the recipient or instantly filled.

Although not previously adapted for wide-scale use in the hospitality industry, various forms of digital wireless communication devices are in common use, e.g., digital wireless messengers and pagers. Also in common use are portable laptop and handheld devices. However, user-friendly information management and communication capability not requiring extensive computer expertise has not heretofore been available for use in everyday life such as for restaurant ordering, reservations and wait-list management. Hundreds of millions of dollars have been spent on personal digital assistant ("PDA") development seeking to produce a small, light-weight and inexpensive device that could be adapted to such uses; yet none have yielded a satisfactory solution.

One of the inherent shortcomings of PDA type devices is that, as they strive for small size, low weight and low cost, they must compromise the size and clarity of the operator display medium interface itself, which in most cases is one of a variety of LCD (liquid crystal display) type devices. As the size of the display shrinks, the amount of information that may be displayed at any one point or time is commensurately decreased, typically requiring multiple screens and displays to display information to the operator. This reduces the overall utility of the device. Additionally, the smaller display and keyboard results in a non-optimal operator interface, which slows down operation and is thus unacceptable for the time criticality of ordering, reservation and wait-list management and other similar applications. This necessitates many design compromises which in the aggregate have resulted in limited acceptance of PDA type devices in the restaurant and hospitality fields.

Many of the negatives prevalent in earlier devices have been eliminated, but, to date, there is still no integrated

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solution to the ordering/waitlist/reservation problem discussed above. With the advent of the Palm® and other handheld wireless devices, however, the efforts to make such devices ubiquitous have begun to bear fruit at least in some areas, e.g., personal calendars. However, substantial use of such devices in the restaurant and hospitality context has not occurred to date. As discussed above, at least one of the reasons PDAs have not been quickly assimilated into the restaurant and hospitality industries is that their small display sizes are not readily amenable to display of menus as they are commonly printed on paper or displayed on, e.g., large, color desktop computer screens. Another reason is that software for fully realizing the potential for wireless handheld computing devices has not previously been available. Such features would include fast and automatic synchronization between a central database and multiple handheld devices, synchronization and communication between a World Wide Web ("Web") server and multiple handheld devices, a well-defined application program interface ("API") that enables third parties such as point of sale ("POS") companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database. A single point of entry for all hospitality applications to communicate with one another wirelessly has also previously been unavailable. Such a single point of entry would work to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online would be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices would be reflected instantaneously on the backoffice server, Web pages and the other handheld devices.

For the foregoing reasons, paper-based ordering, waitlist and reservations management have persisted in the face of widespread computerization in practically all areas of commerce. At most, computerization of these functions has been largely limited to fixed computer solutions, i.e., desktop or mainframe, because of the problems heretofore faced in configuring wireless handheld devices and maintaining database synchronization for such applications. Specifically, the unavailability of any simple technique for creating restaurant menus and the like for use in a limited display area wireless handheld device or that is compatible with ordering over the internet has prevented widespread adoption of computerization in the hospitality industry. Without a viable solution for this problem, organizations have not made the efforts or investments to establish automated interfaces to handheld and Web site menus and ordering options.

A principal object of the present invention is to provide an improved information management and synchronous communications system and method which facilitates user-friendly and efficient generation of computerized menus for restaurants and other applications that utilize equipment with non-PC-standard graphical formats, display sizes and/or applications.

A further object of the present invention is to provide an improved information management and synchronous communications system and method which provides for entry, management and communication of information from the

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operator as well as to and from another computer, Web page menu, remote digital device using a standard hardwired connection, the internet or a wireless link.

A further object of the present invention is to provide an improved information management and synchronous communications system which is small, affordable and lightweight yet incorporates a user-friendly operator interface and displays menus in a readily comprehensible format.

A further object of the present invention is to provide a synchronous information management and communications system which enables automatic updating of both wireless and internet menu systems when a new menu item is added, modified or deleted from any element of the system.

SUMMARY OF THE INVENTION

The foregoing and other objects of the present invention are provided by a synchronous information management and communications system and method optimized for simplicity of operation which incorporates menu generation for creation of menus to be used with wireless remote handheld computer and PDA devices, the internet or any application where simple and efficient generation of menus is appropriate. The menu generation approach of the present invention includes a desktop software application that enables the rapid creation and building of a menu and provides a means to instantly download the menu configuration onto, e.g., a handheld device or Web page and to seamlessly interface with standard point of sale ("POS") systems to enable automatic database updates and communication exchanges when a change or input occurs in any of the other system elements. To solve the above and other related problems, an information management and communications system is provided which results in a dramatic reduction in the amount of time, and hence cost, to generate and maintain computerized menus for, e.g., restaurants and other related applications that utilize non-PC-standard graphical formats, display sizes or applications.

The menu generation approach of the present invention has many advantages over previous approaches in solving the problem of converting paper-based menus or Windows® PC-based menu screens to small PDA-sized displays and Web pages. In one embodiment, the present invention is a software tool for building a menu, optimizing the process of how the menu can be downloaded to either a handheld device or Web page, and making manual or automatic modifications to the menu after initial creation.

Manual modifications to the generated menus include handwritten screen captures and/or voice recorded message captures coupled with the standard menus and modifiers generated according to standard choices. Such manual modifications enable an extremely rapid and intuitive interface to enhance operations and further optimize the overall operator interface. This approach solves a long-standing, operational issue in restaurant/hotel/casino food/drink ordering when customers want something unusual and not anticipated and available through normal computerized selections. As seen in FIG. 8, the operator screen on the hand-held can capture handwritten information specific to a customers requests directly on the touch-sensitive screen of the wireless computing device. This additional information can then be coupled with the fixed menu and modifier information generated automatically from the hospitality application software and the combined message can be sent to a restaurant point of sale (POS) system, printer or/or display system. This unique operator interface enables universal languages and an unlimited set of information to be manu-

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ally communicated and exchanged. The resultant combined message of one or more fixed indications selected from a menu of a device such as a hand-held, and dynamic hand-written messages and/or data provides an even more powerful tool than either modality used independently.

For example a restaurant server taking a drink order could select from a menu of her hand-held device's screen "Iced Tea", and then manually write in the literal screen of her hand-held "with lemon" as shown in FIG. 8. The manually-written information could, for example, be printed or displayed in front of a bartender preparing the drink order. The indication "Iced Tea" as selected from a menu of the hand-held would also be presented to the bartender, perhaps by printing and/or screen display. The server can also select any printer from within the hospitality establishment directly from the operator interface on the screen of the hand-held and have either the order or the receipt printed out where it is most convenient and efficient. Similarly, a server taking a drink order could select from a menu of her hand-held device's screen "Iced Tea", and then record the voice message "with lemon" using her hand-held device integral microphone. The recorded information could, for example, be played on a speaker attached to a computer, POS system, or the like located near the bartender or chef preparing the order. The indication "Iced Tea" as selected from a menu of the hand-held would also be presented to the bartender/chef, perhaps by printing and/or screen display. Both the literal screen capture method and the voice recorded message method combine the power of automatic fixed menu generation with the expanded flexibility to resolve operational issues that exist throughout the hospitality market without this innovative solution. Additionally, in certain embodiments, hand-writing and voice recognition technologies can be utilized to convert the manual operator inputs into appropriate text messages which can be combined with the computer generated menu options to convey the combined information to, for example, a bartender or chef.

Similarly, hand-held devices can link the above innovations to individual customers at specific tables through a graphical user interface on the hand-held screen that assigns each customer a number within a table. For example, table 20 might have 6 customers (1-6) and each customer has a different order. By enabling the linkage of the orders to specific customer positions within the table and accessible from the hand-held screen, the servers can easily track and link the specific orders to the specific customers.

The use of wireless handheld devices in the restaurant and hospitality industry is becoming increasingly pervasive as restaurant owners and managers become more aware of the benefits. With the proper wireless handheld system in place, restaurants can experience increased table turns from improved server productivity and shorter order taking and check paying times. Restaurants and POS companies seeking to provide a wireless handheld interface to their desktop-based POS systems or a Web page equivalent face several challenges. These challenges include building a menu using their existing database and transferring the menu onto hand-held devices or Web pages that will interface with servers wirelessly or to restaurants/customers over the internet. The menu generation approach of the present invention is the first coherent solution available to accomplish these objectives easily and allows one development effort to produce both the handheld and Web page formats, link them with the existing POS systems, and thus provides a way to turn a complicated, time-consuming task into a simple process.

The information management and synchronous communications system of the present invention features include

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fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The communication module also provides a single point of entry for all hospitality applications, e.g., reservations, frequent customer ticketing, wait lists, etc. to communicate with one another wirelessly and over the Web. This communication module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol and can be easily updated to work with a new communication protocol without modifying the core hospitality applications. An exemplary system diagram of such a communications systemic relationship is shown in FIG. 9 and serves as an example of the power of the synchronization element of the invention through a common, linked solution. A single point of entry works to keep all wireless handheld devices and linked web sites in synch with the backoffice server applications so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online can be automatically communicated to the backoffice server and then synchronized with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices are reflected instantaneously on the backoffice server Web pages and the other handheld devices.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing features and advantages of the present invention can be appreciated more fully from the following description, with references to the accompanying drawings in which:

FIG. 1 is a schematic representation of a window displayed on a computer display screen which shows a hierarchical tree menu, modifier window and sub-modifier window in conformity with a preferred embodiment of the present invention.

FIG. 2 is a schematic representation of a modifier dialog box in conformity with a preferred embodiment of the present invention.

FIG. 3 is a schematic representation of a menu category dialog box in conformity with a preferred embodiment of the present invention.

FIG. 4 is a schematic representation of a menu item dialog box in conformity with a preferred embodiment of the present invention.

FIG. 5 is a schematic representation of a display customization dialog box in conformity with a preferred embodiment of the present invention.

FIG. 6 is a schematic representation of a communications control window in conformity with a preferred embodiment of the present invention.

FIG. 7 is a schematic representation of a point of sale interface on a wireless handheld device for use in displaying page menus created in conformity with a preferred embodiment of the present invention.

FIG. 8 is an example of a literal, hand-written screen according to embodiments of the present invention.

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FIG. 9 is an exemplary system diagram relating to embodiments of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Most personal computers today run under an operating system that provides a graphical user interface ("GUI") for accessing user applications. A GUI is used in the preferred embodiment of the present invention. Through an interface of windows, pull-down menus, and toolbars, GUI operating systems have simplified PCs and have rendered computer technology more user friendly by eliminating the need to memorize keyboard entry sequences. In addition, GUIs allow users to manipulate their data as they would physical entities. For example, a window can represent a file and the contents of the window can represent the records of the file. The window can be opened, closed, or set aside on a desktop as if it were an actual object. The records of the file can be created, deleted, modified and arranged in a drag-and-drop fashion as if they also were physical objects. The most common GUI operating systems that provide this "object-oriented" environment for personal computers are Microsoft Windows® systems, including Windows CE® for handheld wireless devices and the like. Generally, a particular application program presents information to a user through a window of a GUI by drawing images, graphics or text within the window region. The user, in turn, communicates with the application by "pointing" at graphical objects in the window with a pointer that is controlled by a hand-operated pointing device, such as a mouse, or by pressing keys on a keyboard.

The use of menus is conventional in GUIs for software applications. Menus are typically utilized to provide end users of applications with available choices or processing options while using the applications. For example, in a typical desktop or interactive application, selection of a "file" from a menu bar may cause display of a context menu which provides "file" options. File options can have additional subordinate or child options associated with them. If a file option having subordinate options is selected, the child options are displayed in context in a child menu or submenu proximate to the selected parent option. One or more of the child options provided in the child menu may have further subordinate options. Thus, such a menu system comprises cascading sets of menus which are displayable in context to show the parent/child relationships between options of the context menu. A menu system of this type is incorporated into the preferred embodiment of the invention. The preferred embodiment of the present invention uses typical hardware elements in the form of a computer workstation, operating system and application software elements which configure the hardware elements for operation in accordance with the present invention. A typical workstation platform includes hardware such as a central processing unit ("CPU"), e.g., a Pentium® microprocessor, RAM, ROM, hard drive storage in which are stored various system and application programs and data used within the workstation, modem, display screen, keyboard, mouse and optional removable storage devices such as floppy drive or a CD ROM drive. The workstation hardware is configured by software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including internet browsing software) and application software components. The preferred embodiment also encompasses a typical file server platform including hardware such as a CPU, e.g., Pentium® microprocessor, RAM, ROM, hard drive, modem, and optional removable storage devices, e.g., floppy or CD ROM drive. The server hardware is configured by

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software including an operating system, e.g., Windows® 95, 98, NT or CE, networking software (including Web server software) and database software.

A computer workstation for use in the preferred embodiment also includes a GUI. As is conventional, the GUI is configured to present a graphical display on the display screen arranged to resemble a single desktop. Execution of an application program involves one or more user interface objects represented by windows and icons. Typically, there may be several windows and icons simultaneously present on the desktop and displaying information that is generated by different applications. The window environment is generally part of the operating system software that includes a collection of utility programs for controlling the operation of the computer system. The computer system, in turn, interacts with application programs to provide higher level functionality, including a direct interface with the user. Specifically, the application programs make use of operating system functions by issuing task commands to the operating system which then performs the requested task. For example, an application program may request that the operating system display certain information on a window for presentation to the user.

An aspect of the preferred embodiment of the information management and communications system of the invention is shown in FIG. 1. FIG. 1 shows an example of the GUI provided by the operating system of the preferred embodiment of the present invention. With reference to FIG. 1, the preferred embodiment includes an intuitive GUI I from which to build a menu on a desktop or other computer. A hierarchical tree structure 2 is used to show the different relationships between the menu categories 3 (e.g., soups, salads, appetizers, entrees, deserts, etc.), menu items 4 (e.g., green salad, chicken caesar salad, etc.), menu modifiers 5 (e.g., dressing, meat temperature, condiments, etc.) and menu sub-modifiers 6 (e.g., Italian, French, ranch, bleu cheese, etc.).

The procedure followed in configuring a menu on the desktop PC and then downloading the menu configuration onto the POS interface on the handheld device in conformance with the preferred embodiment is as follows.

The menu configuration application is launched by clicking on the appropriate icon on the desktop display screen. FIG. 1 will then be displayed. There are three windows on the screen shown in FIG. 1. The left window is the menu tree 7, also called the tree view. The top right window is the Modifiers window 8 and the bottom right window is the Sub-Modifiers window 9. The Sub-Modifiers window lists the sub-modifiers that correspond to the modifier that is selected. The views on the right are referred to as list views. There are several ways of invoking a command, including using the menu options; using the context menu (right mouse click); using the keyboard or using the toolbar icons. For example, if it is desired to add a category to the menu, the following four options are available: (1) clicking on Edit, Add Category; (2) right mouse clicking on Menu, then clicking on Add Category; (3) highlighting Menu, then typing Ctrl+T or (4) clicking on the Add Category icon on the toolbar. To add an item to a category, the following options are available: (1) highlighting the category to which it is desired to add an item and then clicking on Edit>Add Item; (2) right mouse clicking on the desired category and then clicking on Add Item; (3) highlighting the desired category, then typing Ctrl+N or (4) clicking on the Add icon on the toolbar.

When building a menu, it should be kept in mind that the menu items are stored using a tree metaphor similar to how

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files are stored on a PC with folders and subfolders. The menu structure is similar to the Windows® File Explorer in the way the items are organized hierarchically. Below is an example of how an item may be configured:

```

Menu
>> Entrees
>> Red Meat
>> NY Strip
>> Vegetables
>> Tomato
>> Lettuce
Meat Temperature
>> Medium Rare

```

In the above example, Menu is the root. Entrees is a menu category. Red Meat is an Entree category. NY Strip is a modifier. Vegetable is a modifier. Meat Temperature is a modifier. Medium Rare is a sub-modifier of Meat Temperature.

The steps taken in building a menu are as follows:

1. Add Modifiers;
2. Add Sub-Modifiers and link them to the Modifiers;
3. Create Menu categories;
4. Add menu items to the categories;
5. Assign Modifiers to the menu items;
6. Preview the menu on the POS emulator on the desktop PC;
7. Download the menu database to the handheld device.

To add modifiers, a user clicks on the inside of the Modifiers window, then (1) clicks on Edit>Add Modifier, (2) Presses Ctrl+N; (3) right mouse clicks in the Modifiers window, then clicks on Add Modifiers or (4) clicks on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in the Modifier dialog box 10 shown in FIG. 2. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and "OK" is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item as a modifier. To delete a modifier, the modifier is selected and the Delete key pressed on the keyboard. To edit a modifier, either the modifier is double clicked or the Enter key is pressed.

Sub-modifiers represent the last level of modifiers that can be assigned to a menu tree. To add sub-modifiers, the modifier to which sub-modifiers are to be assigned is selected. Then, the focus is set on the sub-modifier window by clicking inside the Sub-Modifier window as follows: (1) clicking on Edit>Add Sub-Modifier; (2) pressing Ctrl+N; (3) right mouse clicking in the Sub-Modifiers window, then clicking on Add Sub-Modifiers or (4) clicking on the Add icon from the toolbar. If a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code and Price in a Sub-Modifier dialog box similar to the Modifier dialog box shown in FIG. 2. As with modifiers, the Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. As before, if there is an existing database, the existing database can be browsed and menu

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items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item as a submodifier. To delete a sub-modifier, the sub-modifier is selected and the Delete key depressed on the keyboard. To edit a sub-modifier, either the sub-modifier is double clicked or the Enter key is pressed.

Menu categories are created from the root. Some examples of categories are Appetizers, Soups, Salads, Entrees, Desserts, etc. The first step is to click on Menu in the menu tree window. Categories are added by (1) clicking on the Add Category icon from the toolbar; (2) clicking on Edit>Add Category or (3) pressing Ctrl+T. As shown in FIG. 3, Menu Category dialog box 11 then appears in which to enter the Long and Short names for the menu category.

To add menu items to categories, the menu category which is being built is clicked. For example, if items are being added to Appetizers, the Appetizers branch is clicked on. Then the Edit>Add Item is clicked on or Ctrl+N pressed. As before, if a menu is being built from scratch, the procedure is to enter the Long Name, Short Name, Code, Prep Time, Recipe and Price into the Menu Item dialog box 12 shown in FIG. 4. The Long Name is the full descriptive name of the item. The Short Name is the abbreviated name that will be displayed on the handheld device. The Code is the numeric or alphanumeric code for the item. Prep Time is the time it takes to prepare the meal and Recipe would include preparation methods and ingredients that are used in the preparation of the item. If there is an existing database, the existing database can be browsed and menu items retrieved from the database. Clicking on the Browse button will bring up the existing database of menu items. The item to be added is then selected and OK is clicked. The fields will then be filled with the information from the database. Clicking on OK again will add the item to the category.

Once the menu items have been entered, it may be desired to assign some modifiers to the menu items. For example, it may be desired to assign meat temperature to a steak order. To accomplish this, first the modifier to be assigned is selected, then the menu item on the tree view that is to be assigned the modifier is clicked on and then Edit>Assign Modifier is clicked on. Or, the modifier can simply be dragged and dropped onto the menu item to link them. A dialog box is then displayed asking if this modifier is a required modifier. If it is a required modifier, the display icon will be red but if it is a non-required modifier the display icon will be green. As many modifiers as are applicable can be assigned. If any changes are made to the modifiers, those changes will be automatically reflected throughout the menu tree.

Once the modifiers have been entered, it may be desired to assign sub-modifiers to the modifiers items. For example, it may be desired to add Honey Mustard as a sub-modifier to Dressing. To accomplish this, first the modifier to be assigned a submodifier is selected, then the sub-modifier window is clicked on, then Edit>Add Sub Modifier is clicked on, Ctrl+N entered or the Add icon from the toolbar is clicked on. Or, the sub-modifier can simply be dragged and dropped onto the modifier to link them.

When the menu has been completely configured, it can be previewed on a POS emulator on the desktop to verify that the menu is correctly configured before downloading it to the handheld device. To preview, File>Preview Database is clicked on or the Preview Database icon from the toolbar is clicked on. The handheld POS emulator on the desktop can

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then be run. If the configuration is deemed acceptable, the handheld device is connected to the desktop PC to ensure that a connection has been established; the POS application on the handheld device is exited and File>Download Database is clicked on or the Download Database icon from the toolbar is clicked on. If there is an existing menu database on the handheld device, the system will ask if the existing database should be replaced. Yes is clicked if existing database replacement is desired.

A database function enables the creation of, e.g., a breakfast menu, lunch menu and dinner menu and downloading them to a handheld device. Functions available are (1) creating a new database; (2) opening an existing database; (3) saving a database under a different name. To access these functions, File is clicked on the menu bar.

The preferred embodiment encompasses customized layout, views and fonts. To set the focus on the view it is desired to change, click inside the desired window. The main customizing dialog box is accessed by clicking on View>Customize View. A dialog box 13, as shown in FIG. 5, will be displayed including tabs that allow the following options: selection of Columns to display in the list view by choosing and arranging the fields to display in the Modifiers and Sub-Modifiers windows; formatting Columns by specifying the column widths and justification; selecting Filter allows restricting the list to display only the items that meet certain criteria. For example, display of modifiers with codes between 500 and 550. Selecting Sort allows sorting the modifiers or submodifiers according to any of the available fields such as Name, Code or Price. Selecting Style facilitates choice of font type, style, size, etc. To change the font in a particular window, click on View>Fonts or right mouse click in the desired window and then click on Fonts. To change the size of the windows, drag the borders of the windows to expand or contract the size of the windows. To change the column widths, simply drag the edge of the column headers to increase or decrease the column widths.

A communications control program monitors and routes all communications to the appropriate devices. It continuously monitors the wireless network access point and all other devices connected to the network such as pagers, remote devices, internet Web links and POS software. Any message received is decoded by the software, and then routed to the appropriate device. No user action is needed during operation of the software once the application has been launched. To launch the communications control module, a Wireless Traffic icon is clicked on the desktop PC. When the program loads, the screen shown in FIG. 6 appears. Messages received are logged in the window 14 shown in FIG. 6 with a time stamp. The messages are also logged to a file on the hard drive. This provides a mechanism to monitor all traffic across the network (possibly useful for troubleshooting, or maintenance, but not necessary for normal operation). The program may be minimized so the screen is not displayed on the desktop, but it must be running for proper communications to exist between all devices on the network.

As stated, the preferred embodiment of the present invention includes the use of and compatibility with GUI technology. A drag-and-drop approach is used for organizing the tree structure 2 in the generated menu. Drag-and-drop is also used for assigning modifiers (modifiers can be dragged from the modifiers window 5 and dropped onto the menu item 4 for assignment). In-cell editing results in fast editing of items in building the menus. Customizable fonts enable users to change font types, style and size. Customizable layouts enable users to resize windows, change icons and

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display preferences. The inventive approach provides for fully persistent storage between sessions, even if a session is improperly or abruptly terminated. Font and the tree state (i.e., which nodes are expanded/collapsed) are stored between sessions. Layout for modifiers and sub-modifiers list views (filter, columns, formatting, font, etc.) are stored between sessions. The last database used is likewise stored between sessions. Splitter views allow the user to see different views at the same time. Each view is displayed on its own section of the screen. Views can be resized via the keyboard or a mouse by simply dragging the splitter in the middle.

An automated function is provided to import existing POS databases into the inventive menu generation system and, as discussed above with respect to the detailed example of how to use the preferred embodiment, an automated download procedure is provided to transfer the desktop database onto a handheld device and/or Web page. Also as discussed, the preferred embodiment facilitates preview of the handheld device or Web page version of the POS menu on the desktop before downloading and configuration. Customizable desktop menu generation is contemplated, as discussed above, in the form of customizable fonts, columns, layouts, etc. The inventive approach also includes templates for common modifiers that can be assigned to similar menu items. The preferred embodiment also supports multiple databases, thus providing for the creation and storing of different menu databases on handheld devices such as breakfast, lunch or dinner menus. The user can then select the appropriate database to reflect the time of day.

FIG. 7 is a schematic representation of a point of sale interface 15 for use in displaying a page-type menu 16 created using the inventive menu generation approach. As can be seen from FIG. 7, the page menu is displayed in a catalogue-like point-and-click format whereas the master menu, FIG. 1, is displayed as a hierarchical tree structure. Thus, a person with little expertise can "page through" to complete a transaction with the POS interface and avoid having to review the entire menu of FIG. 1 to place an order. A PDA or Web page format could appear like FIG. 7 or the display could be configured for particular requirements since fully customizable menu generation and display are contemplated.

The POS interface on the handheld device supports pricing in the database or querying prices from the POS server. The POS device also can be customized with respect to "look and feel" for the particular version. As can be seen in FIG. 7, the POS interface provides for billing, status and payment with respect to orders. A myriad of options can be provided depending on the application.

Advanced database functions are provided in the preferred embodiment of the invention, including an automated download process onto handheld devices and/or Web sites. In the preferred embodiment, the menu generation system of the present invention uses an API called ActiveX Data Objects ("ADO") for database access. ADO is useful in a variety of settings. It is built on top of OLE DB and can be used to talk to databases and, in the future, any data source with any OLE DB driver. Advanced querying is supported. The database can be queried on virtually all fields. Queries can be built using SQL syntax for experienced users or can be created using a query builder which guides users through the creating process. Advanced error handling is supported. Errors occurring at run time can be trapped. A descriptive message is displayed to alert the user and provide error information. However, the application does not terminate when the errors happen. The source code is easy to maintain

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and modify, thus allowing for on time delivery of customized versions of the software. The advanced database functions produce well-designed databases that accommodate growth and scalability.

The inventive menu generation approach provides a solution for the pervasive connectivity and computerization needs of the restaurant and related markets. The inventive solution includes automatic database management and synchronization, PDA and handheld wireless operating system integration and optimization, wireless communications and internet connectivity, user interface design, and graphics design.

In the preferred embodiment, the menu generation approach of the present invention uses Windows CE® as the operating system for the handheld devices. Windows CE® provides the benefits of a familiar Windows 95/98/NT® look and feel, built-in synchronization between handheld devices, internet and desktop infrastructure, compatibility with Microsoft Exchange®, Microsoft Office 9® and TCP/IP quick access to information with instant-on feature.

Windows CE® provides a basic set of database and communication tools for developer use. However, interfacing with these tools to provide application specific results can be a complex task. In addition to the menu generation described above, a set of software libraries described herein in conformance with the present invention not only enhances the basic Windows CE® functionality by adding new features but also maximizes the full potential of wireless handheld computing devices. Such features include fast synchronization between a central database and multiple handheld devices, synchronization and communication between a Web server and multiple handheld devices, a well-defined API that enables third parties such as POS companies, affinity program companies and internet content providers to fully integrate with computerized hospitality applications, real-time communication over the internet with direct connections or regular modem dialup connections and support for batch processing that can be done periodically throughout the day to keep multiple sites in synch with the central database.

The synchronous communications control module discussed above provides a single point of entry for all hospitality applications to communicate with one another wirelessly or over the Web. This communications module is a layer that sits on top of any communication protocol and acts as an interface between hospitality applications and the communication protocol. This layer can be easily updated to work with a new communication protocol without having to modify the core hospitality applications. The single point of entry works to keep all wireless handheld devices and linked Web sites in synch with the backoffice server (central database) so that the different components are in equilibrium at any given time and an overall consistency is achieved. For example, a reservation made online is automatically communicated to the backoffice server which then synchronizes with all the wireless handheld devices wirelessly. Similarly, changes made on any of the wireless handheld devices will be reflected instantaneously on the backoffice server and the other handheld devices.

The software applications for performing the functions falling within the described invention can be written in any commonly used computer language. The discrete programming steps are commonly known and thus programming details are not necessary to a full description of the invention.

A simple point-to-point wireless capability is contemplated which permits simple digital messages to be sent from

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the wireless handheld devices to a receiver in a beeper and/or valet parking base-station. The POS interface of FIG. 7 is representative of the display on a typical wireless device used in conformity with the invention. A simple protocol is used to acknowledge receipt of the message and thus simultaneous communication is not necessary, which reduces the cost of the wireless link. The range of the wireless link is determined by the characteristics of the radio transceiver. Adding a wireless link allows paging of beeper equipped customers directly from the operator interface on the wireless handheld devices and communication to and from various input/output transmitters and receivers to update the status of the order, reservation or other information and thus further reduce the workload on the operator and enable operations to proceed much faster. This link could also be hardwired or otherwise implemented using any two-way messaging transport.

A further aspect of the invention is the use of the menus generated in accordance with the described technique to place orders from wireless remote handheld devices or from remote locations through the internet. The World Wide Web is a distributed hypermedia computer system that uses the internet to facilitate global hypermedia communication using specified protocols. One such protocol is the Hypertext Transfer Protocol ("HTTP"), which facilitates communication of hypertext. Hypertext is the combination of information and links to other information. In the context of the Web, hypertext is defined by the Hypertext Mark-up Language ("HTML"). The links or hyperlinks in a HTML document reference the locations of resources on the Web, such as other HTML documents. Another language used in creating documents for use on the Worldwide Web, to display on computer screens, or to create speech style sheets for use in, e.g., telephones, is the Extensible Mark-Up Language ("XML"). XML is a "metalanguage", i.e., a language for describing languages which was developed to eliminate the restrictions of HTML.

The Web is a client-server system. The HTML documents are stored on Web server computers, typically in a hierarchical fashion with the root document being referred to as the home page. The client specifies a HTML document or other source on the server by transmitting a Uniform Resource Locator ("URL") which specifies the protocol to use, e.g., HTTP, the path to the server directory in which the resource is located, and filename of the resource. Users retrieve the documents via client computers. The software running on the user's client computer that enables the user to view HTML documents on the computer's video monitor and enter selections using the computer's keyboard and mouse is known as a browser. The browser typically includes a window in which the user may type a URL. A user may cause a URL to be transmitted by typing it in the designated window on the browser or by maneuvering the cursor to a position on the displayed document that corresponds to a hyperlink to a resource and actuating the mouse button. The latter method is commonly referred to simply as "clicking on the hot-spot" or "clicking on the hyperlink". The hyperlink methodology is contemplated for use in accordance with the preferred embodiment to transmit orders via the internet.

Web server application software exists that enables a user to shop for and order merchandise. Such systems are sometimes referred to as electronic merchandising systems or virtual storefronts. Systems that enable a user to choose among several retailers' goods are sometimes referred to as electronic malls. An electronic retailer's or electronic mall operator's Web server provides HTML forms that include

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images and descriptions of merchandise. The user may conventionally search for an item by entering a key word search query in a box on a form. When a user selects an item, the server may provide a linked form that describes that item in further detail. The user may also conventionally enter ordering information into boxes on the form, such as the type and quantity of the item desired. The information entered by the user is transmitted to the server. The user may select multiple items in this manner and then enter a credit card number to pay for the purchases. The retailer processes the transaction and ships the order to the customer. As can be appreciated, ordering merchandise can also be done from menus. The generation of menus of items or merchandise for sale over the internet is readily accomplished by the menu generation approach of the present invention.

Searching for items that the user is interested in purchasing is insufficient in prior merchandising systems. Database management programs use index searching to facilitate rapid searching of large amounts of data. The creator of the database may instruct the program to use specified fields in the database as indexed or key fields. The program locates all terms in the database that appear in the indexed fields and stores them in an index table. Each entry in the index table includes a term and corresponding pointer to the location in the database where the term is found. If a user initiates a search for a term that is present in the index table, the program can locate the instances of that term in the database with exceptional speed. Users who are familiar with the particular database they are searching will generally know which fields are indexed and will know the format of the data in those fields. For example, a user of a database containing the inventory of a bookstore may know that users can search for the names of authors of books and that a user who wishes to do so should enter the author's last name first. A user having such knowledge will therefore be able to search efficiently. Users of electronic merchandising systems, however, are generally end-consumers who have no knowledge of a merchant's database. If, as is very likely, such a user initiates a search for a term that is not present in the index table, the program must sequentially search through all records in the database. Sequential records are typically linked by pointers. Using pointers in this manner is very demanding on server resources, resulting not only in an exceptionally slow search, but also creating a bottleneck for other processes that the server may be executing. The menu generation approach of the present invention can be used to create customized menus from a database that includes every item of merchandise the vendor has for sale. In this manner, customers can scan the generated menu much more readily than they could view the entire database and the necessity of having familiarity with the database is eliminated as well, reducing the need for resource intensive pointers.

While the preferred embodiment of the invention is for the generation of restaurant menus and the like, the broad scope of the invention is far greater. For example, menus generated in accordance with the invention can be used in the desktop computing environment in association with the operating system or application programs. One such use is to facilitate the creation of user personalized file structures for general desktop use. Another use is to facilitate the location of customized menus from master menus for use in association with application software to make the execution of the application software more efficient by, e.g., eliminating the necessity of querying or checking every tree branch in the master menu file structure in response to user input or other criteria and to create handheld/PDA compatible versions of the software.

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While the preferred embodiment of the invention includes the selection of items from a master menu wherein the master menu is displayed using a graphical user interface, it is to be appreciated that any means for displaying the master menu to the user and generating another menu in response to and comprised of the selections made is encompassed by the contemplated invention. The invention encompasses the selection of nontextual symbols, characters, icons and the like, in addition to text, from a hierarchical tree menu or the like for generation of another menu comprised of such items.

It is also within the scope of the invention to generate menus automatically in response to predetermined criteria. For example, in the restaurant menu generation embodiment, a modified menu can be generated to comply with a particular specification or group of criteria such as, e.g., "dinner", "low cholesterol", "low fat", "fish", "chicken", or "vegetarian". In this embodiment, only items from the master menu that satisfy specified parameters will be included in the generated menu. The selection process could involve selection of master menu items based on tags or identifiers associated with the items or by checking every master menu item against a dictionary of items acceptable for inclusion in the modified menu. It should also be appreciated that the invention encompasses any combination of automatic and manual user selection of the items comprising the generated menu. For example, a user might specify criteria which would further control automatic selection or the user could manually select some items with automatic selection of others. The menu generation aspect of the invention is equally applicable to table-based, drive-thru, internet, telephone, wireless or other modes of customer order entry, as is the synchronous communications aspect of the invention.

The inventive concept encompasses the generation of a menu in any context known to those skilled in the art where an objective is to facilitate display of the menu so as to enable selection of items from that menu. The restaurant menu generation embodiment is but one example of a use for the inventive concept. Likewise, displaying menus generated in accordance with the invention on PDAs and Web pages to facilitate remote ordering are but a few examples of ways in which such a menu might be used in practice. Any display and transmission means known to those skilled in the art is equally usable with respect to menus generated in accordance with the claimed invention.

In the more general situation, menus can be generated in accordance with the present invention in a variety of situations. For example, the usable file structure for a particular data processing application can be dictated by the user or an application program prior to or during the execution of the application program. Efficiencies with respect to computational speed and equipment, e.g., storage and processor, usage can thus be achieved along with the facilitation of display of the generated menu.

While the best mode for carrying out the preferred embodiment of the invention has been illustrated and described in detail, those familiar with the art to which the invention relates will recognize various alternative designs and embodiments which fall within the spirit of practicing the invention. The appended claims are intended to cover all those changes and modifications falling within the true spirit and scope of the present invention.

That which is claimed is:

1. An information management and synchronous communications system for generating and transmitting menus comprising:

- a. a central processing unit,
- b. a data storage device connected to said central processing unit,
- c. an operating system including a graphical user interface,

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d. a first menu consisting of menu categories, said menu categories consisting of menu items, said first menu stored on said data storage device and displayable in a window of said graphical user interface in a hierarchical tree format,

e. a modifier menu stored on said data storage device and displayable in a window of said graphical user interface,

f. a sub-modifier menu stored on said data storage device and displayable in a window of said graphical user interface, and

g. application software for generating a second menu from said first menu and transmitting said second menu to a wireless handheld computing device or Web page, wherein the application software facilitates the generation of the second menu by allowing selection of categories and items from the first menu, addition of menu categories to the second menu, addition of menu items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system, said parameters being selected from the modifier and sub-modifier menus, wherein said second menu is manually modified after generation.

2. The system of claim 1 wherein the modified second menu can be selectively printed on any printer directly from the graphical user interface of a hand-held device.

3. The system of claim 1 wherein the modified second menu can be linked to a specific customer at a specific table directly from the graphical user interface of a hand-held device.

4. An information management and synchronous communications system for generating menus comprising:

- a. a central processing unit,
- b. a data storage device connected to said central processing unit,
- c. an operating system including a graphical user interface,

d. a first menu stored on said data storage device,

e. application software for generating a second menu from said first menu,

wherein the application software facilitates the generation of the second menu by allowing selection of items from the first menu, addition of items to the second menu and assignment of parameters to items in the second menu using the graphical user interface of said operating system and wherein data comprising the second menu is synchronized between the data storage device connected to the central processing unit and at least one other computing device, wherein said second menu is manually modified by handwriting or voice recording after generation.

5. An information management and synchronous communications system for generating menus comprising:

- a. a microprocessor,
- b. a display device,
- c. a data and instruction input device,
- d. a data storage device for storing information and instructions entered through said data and instruction input means or information generated by said microprocessor,
- e. an operating system,
- f. a master menu stored on said data storage device for generating a modified menu, and
- g. application software,

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wherein said microprocessor, operating system and application software are operative to display the master menu on the display device in response to instructions programmed into said microprocessor, operating system, application software and information and instructions entered through said data input device, and wherein said microprocessor, operating system and application software are operative to create the modified menu from said master menu in response to information and instructions entered through said data and instruction input device and wherein data comprising the modified menu is synchronized between the data storage device and at least one other computing device, wherein said modified menu is manually modified after generation.

6. The information management and synchronous communications system of claim 1, 4, or 5 wherein the manual modification involves handwriting capture.

7. The system of claim 6 wherein the handwriting capture involves handwriting recognition and conversion to text.

8. The information management and synchronous communications system of claim 1, 4, or 5 wherein the manual modification involves voice capture.

9. The system of claim 8 wherein the voice capture involves voice recognition and conversion to text.

10. The system of claim 4 or 5 wherein the modified second menu can be selectively printed on any printer directly from the graphical user interface of said other computing device.

11. The system of claim 4 or 5 wherein the modified second menu can be linked to a specific customer at a specific table directly from the graphical user interface of said other computing device.

12. In a computer system having an input device, a storage device, a video display, an operating system including a graphical user interface and application software, an infor-

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mation management and synchronous communications method comprising the steps of:

- a. outputting at least one window on the video display;
 - b. outputting a first menu in a window on the video display;
 - c. displaying a cursor on the video display;
 - d. selecting items from the first menu with the input device or the graphical user interface;
 - e. inserting the items selected from the first menu into a second menu, the second menu being output in a window;
 - f. optionally adding additional items not included in the first menu to the second menu using the input device or the graphical user interface;
 - g. storing the second menu on the storage device; and
- synchronizing the data comprising the second menu between the storage device and at least one other data storage medium, wherein the other data storage medium is connected to or is part of a different computing device, and wherein said second menu is manually modified after generation.

13. The method of claim 12 wherein the manual modification involves handwriting capture.

14. The method of claim 13 wherein the handwriting capture involves handwriting recognition and conversion to text.

15. The method of claim 12 wherein the manual modification involves voice capture.

16. The method of claim 15 wherein the voice capture involves voice recognition and conversion to text.

* * * * *

FORM 30. Certificate of Service

Form 30
July 2020**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT****CERTIFICATE OF SERVICE****Case Number** 22-1200, 22-2223**Short Case Caption** Ameranth, Inc. v. Domino's Pizza, LLC

NOTE: Proof of service is only required when the rules specify that service must be accomplished outside the court's electronic filing system. See Fed. R. App. P. 25(d); Fed. Cir. R. 25(e). Attach additional pages as needed.

I certify that I served a copy of the foregoing filing on 12/20/2022

by ☐ U.S. Mail ☐ Hand Delivery ☒ Email ☐ Facsimile
☐ Other: _____

on the below individuals at the following locations.

Person Served	Service Location (Address, Facsimile, Email)
Frank A. Angileri Brooks Kushman P.C.	1000 Town Center, 22nd Floor, Southfield, MI 48075 fangileri@brookskushman.com
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☐ Additional pages attached.Date: 12/20/2022Signature: /s/ Robert F. RuyakName: Robert F. Ruyak

FORM 19. Certificate of Compliance with Type-Volume Limitations

Form 19
July 2020

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATIONS

Case Number: 2022-1200, 2022-2223

Short Case Caption: Ameranth, Inc. v. Domino's Pizza, LLC and Domino's Pizza, Inc.

Instructions: When computing a word, line, or page count, you may exclude any items listed as exempted under Fed. R. App. P. 5(c), Fed. R. App. P. 21(d), Fed. R. App. P. 27(d)(2), Fed. R. App. P. 32(f), or Fed. Cir. R. 32(b)(2).

The foregoing filing complies with the relevant type-volume limitation of the Federal Rules of Appellate Procedure and Federal Circuit Rules because it meets one of the following:

- ☒ the filing has been prepared using a proportionally-spaced typeface and includes 15,568 words.
- ☐ the filing has been prepared using a monospaced typeface and includes _____ lines of text.
- ☐ the filing contains _____ pages / _____ words / _____ lines of text, which does not exceed the maximum authorized by this court's order (ECF No. _____).

Date: 12/20/2022

Signature: /s/ Robert F. Ruyak

Name: Robert F. Ruyak

FORM 31. Certificate of Confidential Material

Form 31
July 2020

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

CERTIFICATE OF CONFIDENTIAL MATERIAL

Case Number: 2022-1200 

Short Case Caption: Ameranth, Inc. v. Domino's Pizza, LLC, et al.

Instructions: When computing a confidential word count, Fed. Cir. R. 25.1(d)(1)(C) applies the following exclusions:

- Only count each unique word or number once (repeated uses of the same word do not count more than once).
- For a responsive filing, do not count words marked confidential for the first time in the preceding filing.

The limitations of Fed. Cir. R. 25.1(d)(1) do not apply to appendices; attachments; exhibits; and addenda. *See* Fed. Cir. R. 25.1(d)(1)(D).

The foregoing document contains fifteen number of unique words (including numbers) marked confidential.

- ☒ This number does not exceed the maximum of 15 words permitted by Fed. Cir. R. 25.1(d)(1)(A).
- ☐ This number does not exceed the maximum of 50 words permitted by Fed. Cir. R. 25.1(d)(1)(B) for cases under 19 U.S.C. § 1516a or 28 U.S.C. § 1491(b).
- ☐ This number exceeds the maximum permitted by Federal Circuit Rule 25.1(d)(1), and the filing is accompanied by a motion to waive the confidentiality requirements.

Date: 12/20/2022

Signature: /s/ Robert F. Ruyak

Name: Robert F. Ruyak